CAMEROONIAN SAFETY NETS IN THE KORUP NATIONAL FOREST

By

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by

Rodney J Stubina

All those who wander are not lost
This book is dedicated to
Caesar Saul

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Abstract of Dissertation Presented to the Graduate School
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CAMEROONIAN SAFETY NETS IN THE KORUP NATIONAL FOREST: RISK, RECIPROCITY AND RURAL CREDIT

By

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Chair: Art Hansen PhD
Department: Department of Anthropology

Many studies have shown that rural people in Africa and elsewhere turn to the forest with greater intensity when they experience mishaps. When crops fail or when sudden needs for cash arise, households often increase the amount of goods they take from the forest. The forest acts as a safety net. In this study, we estimate the insurance value of the forest by assessing the extra value people extract from the forest when faced with shocks to themselves, their households, or their villages. We hypothesized that households with access to credit or other forms of insurance (e.g., labor markets) will not depend on the forest in times of need. Households without access to these forms of self-insurance will increase their reliance on the forest when mishaps strike. We estimated the economic value of the forest as a safety net for 45 rural households in six villages with access to credit, and another 45 households without access to credit.

This research, funded by the Smithsonian's Center for Tropical Forest Sciences, examines interactions among environmental management, local population's subsistence

strategies and access to informal and formal individual credit in Africa's oldest intact rainforest, the Korup National Forest, in Southwest Cameroon. Specifically the original research proposed to examine the range of impacts of economic and environmental shocks on rural farmer s use of forest products in the context of previous work on natural resource management and forest use Additionally in the context of these two bodies of work this research examines the nexus of issues relating to the access to formal and informal credit and its relationship to forest use and conservation within the various models of park management This is a significant link that has been left relatively unexplored in the current literature

CHAPTER 1
INTRODUCTION

Broad Perspective

This research presented here was designed to examine access to individual credit in Africa s oldest intact rainforest the Korup National Forest in Southwest Cameroon.

Specifically the original research proposed to examine the range of impacts of household economic and environmental shocks on rural farmers use of forest resources in the context of previous work on natural resource management and forest use

This research examines the nexus of issues relating to access to individual credit and its relationship to forest use and conservation within the various models of park management This is a significant link that has not been explored in the current literature probably as a result of two factors one practical and one conceptual

At a practical level issues of economic stress and risk aversion have not been addressed for lack of longitudinal data on the income and consumption of rural households This absence is particularly notable in low income countries (Morduch 1995) At a conceptual level even less attention has been given to the structural sources and events that lead to transitory poverty and its relationship to forest use in communities adjacent to protected areas where the conservation of biodiversity is an evolving and incipient aspect of national policy

This research proposal was funded in part, to fill in this gap and as a socio-cultural component to a broader comparative study of forest use in Columbia, Ecuador Puerto Rico India the Philippines Thailand, Malaysia, and Cameroon The International Cooperative

Biodiversity Group (ICBG) is an initiative jointly sponsored by the U S National Institutes of Health the National Science Foundation, and the U S Agency for International Development. It primarily funds the broader comparative study, which is directed by Dr Elizabeth Losos of the Smithsonian's Center for Tropical Forest Science The aim of the ICBG program is to examine how drug discovery from natural products found in developing countries can promote biodiversity conservation and sustainable economic development

The original 1994 study by the Smithsonian's Center for Tropical Forest Science initiated a botanical survey of a 50-hectare plot in central Korup National Park South West Cameroon. The region was chosen because it was representative of Korup National Park's primary forest Out of 107,000 hectares, the Smithsonian's Center for Tropical Forest Science maintains a 50-hectare plot in Korup National Park's core forest Within this plot, more than 329 000 trees have been tagged measured and catalogued (Kenfack 2000 Thomas 2000).[1]

Samples of flora from each species of tree are measured, identified and sent to five herbariums – Kew Gardens in Britain Le Jardin Botanique in France Le Jardain National di Cameroon in Yaoundé the St Louis Botanical Garden in Missouri and the Limbe Botanical Garden in South West Cameroon – as part of an attempt to accomplish three things first, to identify potential pharmaceutical products in the Korup Forest second, to create a comprehensive catalogue of all the varieties of trees located there; and, third, to determine the health of this forest within the context of its historical record The same experiment has been attempted in the Democratic Republic of Congo Puerto Rico, Ecuador Columbia,

[1] Personal communication

Malaysia, Thailand, India, the Philippines, Singapore, and Taiwan in an effort to gain a global awareness of forest survivability and diversity [2]

This study was designed to examine one particular subset of issues related to the broader global ICBG/Smithsonian study. The focus of this research was to examine the impact of stress and risk aversion (environmental, economic, and social) as a component of a wider study of tropical forest valuation conducted in Bolivia and Honduras that was coordinated by Ricardo Godoy of Brandeis University. Given recent evidence from tropical forests in Central America that examined indigenous efforts toward smoothing consumption against misfortune, as well as access to credit and market integration, which may have a major impact on forest clearance under conditions of collective and individual stress (Godoy et al. 1993, 1997, 1998, 2000; Wong and Godoy 2002; Morduch 1999; Pattanayak and Sills 2001).

Research presented here examined the adequacy and variations of informal and formal insurance mechanisms in buffering consumption in the face of misfortune and calamity. We also estimated whether access to credit might have had a positive effect in smoothing consumption while restraining intensified forest use. The effectiveness of these mechanisms was determined using various levels of household indicators, including health.

Although this research was funded as part of a broader comparative study, it is also considered a regional complement of the Smithsonian's interest in a broad-based inter-donor effort to strengthen the overall management plan of the Korup Forest, which started in 1994.

Specific Perspective

The significance of this investigation must be understood within a larger context of research on tropical deforestation and species extinction in biologically diverse, yet fragile

[2] The project in Democratic Republic of Congo closed due to political instability.

environments Research on tropical deforestation and species extinction shows that population growth and profound changes in the biosphere resulting from human perturbation of the bio-geochemical cycles are altering the course and character of biological evolution in forests worldwide (Whitmore and Sayer 1992) [3]

Tropical forests contain much of the world s biodiversity and sequester vast amounts of carbon (Pattanayak and Sills 2001) Due to mounting concerns over species loss and climatic change an international spotlight is now trained on the protection of tropical forests which are considered to provide a natural insurance against these problems (Perrings 1995)

Human impact on tropical forests via its focus on the resources available for exploitation increases exponentially during times of stress. The relationship between human impact and alterations of tropical forests results directly in a loss of biodiversity This becomes chronic in times of vulnerability Not only are forest resources exploited for consumption, but older forested areas are cleared for commercial or subsistence agriculture Cleared areas are most likely supplanted by exotic plant species with uncertain and possibly destructive consequences on adjacent ecosystems As a consequence primary forest biodiversity becomes fragmented Thus the tropical landscape loses its resilience, altering its essential nature

This study focuses on the villages in and around the Korup National Park and its support zone This study measures four broad categories of factors that, based on the literature, were considered to have a decisive impact on local use of forest products for cash and subsistence purposes These categories include

[3] The term deforestation as used by forestry statisticians refers to the transformation of forested land to permanently cleared land or to a shifting cultivation cycle (Reid 1992 in Whitmore and Sayer 1992)

- local access to available credit,
- local perceptions of personal health
- local attitudes toward the forest and its resources
- normative nutritional standards determined by the World Health Organization.

For the purposes of the study household forest use and the income derived from it was measured in terms of income reported from the sale of forest products or in terms of the cash equivalent value of forest products consumed by the household The worth of crops or forest products was based on average market prices in the regional markets This study does not attempt to measure internal consumption of products for which no cash equivalent could be calculated (e g non timber forest products such as household fuel wood, home remedies roots or products that are used by households for individual consumption with no average value) These suppositions were the foundation for the design implemented in the study of forest use in the Korup National Park Zone

Hypotheses

This research is unique in several ways that merit brief mention before turning to the empirical analysis First researchers in six main sites used the same methods to collect socio-economic information in an effort to construct a panel data set The use of the same methods to collect information across sites facilitates comparison Second, researchers measured forest use, consumption and shocks to income (proxied by illness and wealth) through direct observation to reduce measurement errors. Last the six villages are relatively self-sufficient However they represent different degrees of exposure to credit and to the market allowing us to compare household consumption and use of the forest resources along different points of an idealized autarky-to-market continuum The Korup Zone provides an ideal laboratory

for answering Godoy s query as to whether access to credit decreases economic dependence on forest resources

All of these variables were integral to the Smithsonian s Center for Tropical Forest Sciences willingness to support this research as part of its long-term interest in the designing of an instrument to mitigate stress on forest resources in the Korup Zone

Two specific hypotheses evolved. The first hypothesis tested was that households with access to credit

- depend less on the forest for income
- show greater excess in consumption because they would be able to isolate consumption from production
- would not be limited by household size as to the amount they could produce because they would be able to borrow to [or] hire workers.
- would be less vulnerable to recurrent health problems due to their stable consumption

The second hypothesis was that households without access to credit.

- use the forest (rather than credit) after experiencing a shock to their household or during lean periods
- change their production strategies (e g intercrop diversify) to self-insure production,
- pay a premium in lost output (and lower income) relative to households with access to credit
- experience higher variability in income and consumption
- experience a wider and higher occurrence of health-related problems relative to households with access to credit,
- encounter more risk associated with health and welfare relative to households with access to credit

Findings

Results confirm that health and living standards affect need for and the reliance on the sale of forest products Specifically income from the sale of forest products was higher as a

percentage of total income for lower income households and families whose overall productivity was limited by poor health. This study did not find that access to formal (e.g., bank or project-accorded) credit had any measurable impact on the level of reliance on forest products. This had been the major focus of this study.

This study showed no causal relationship between formal credit and forest use in either good times or bad. A much more elaborate web of informal credit networks existed than was anticipated in the original research design. This informal credit web may be a viable component of an elaborate insurance mechanism. Unfortunately, the original research design and research instruments emphasized formal credit, which meant that informal credit was underestimated, and may not have been as carefully observed as it would have been if originally included. Although informants were asked monthly if they had any money in savings, borrowed any amount of money, or had any outstanding loans, this did not fully represent informal credit sources.

Although precise data are lacking, this study presents ample empirical evidence for informal credit networks that support subsistence and consumption in both good times and bad. This evidence, corabined with extensive qualitative interviews illustrating the importance of informal credit, suggests that the significance of the relationship between credit and forest use might have been stronger had the full scale of informal credit been included in the original equation and analyzed.

Especially important was the early qualitative evidence of people's access and dependence on informal credit and reciprocal relationships. As a resource, this had a strong pervasive influence on income smoothing and earning capabilities. The same access to

traditional credit networks appeared to be inversely correlated with the level of dependence on forest products, and positively correlated with health and food security.

Based on the analysis, this study concludes that access to credit — if credit is defined to include both formal and informal credit — may smooth consumption more efficiently than traditional risk coping strategies, such as productive asset depletion, intensified forest use, or seasonal migration. Consumption credit — if it includes both formal and informal credit — can help in bridging temporary food shortages and alleviating personal emergencies as an insurance mechanism while maintaining human productive capacity (Schrieder 1996).[4] These findings highlight the critical importance of these issues, the need for further studies and increased sophistication regarding how to measure and model informal credit flows.

Implications

The results of this research have significant implications for conservation policy that heretofore has focused almost exclusively on a combination of direct interventions that are designed to restrict forest access, but at the same time attempt to raise farmer incomes. When credit has been mentioned in the current literature on supportive rural financial structures, it has usually dealt with increasing local access to formal credit (through state or parastatal institutions) that is often not sustainable once special project funding ends. With an evaluation of these findings from the Korup National Forest Zone, and the large literature that exists on traditional credit institutions in Sub-Saharan Africa, suggestions can be made regarding the various ways that the developmental impact of these so called "traditional" institutions could be strengthened in such isolated rural areas as those associated with the Korup National Forest.

[4] Credit used strictly for purchases with respect to consumption, which is usually defined, as a constant price aggregate of expenditures on a long list of goods and services.

This has important policy implications in targeting specific sectors of indigenous institutional support mechanisms. Much of the problem in the Korup Park Zone is in identifying and implementing acceptable strategies to mitigate the stress on vulnerable forest resources. This has generally been conducted using a "top down" approach where resettlement, enforcement, and re-education have been the main components in determining success. While some of these goals may have been met, effects on vulnerable resources may remain constant or even escalate, at the expense of local dialogue and participation. Therefore, identifying success remains elusive. By determining the dynamics involved in stress consumption and rural shock absorption mechanisms, a proper plan can then be designed to offer alternatives, as opposed to directives, to rural farmers. This will strengthen indigenous mechanisms used by farmers in mitigating stress in their own environments where conservation is part of an evolving national policy.

Road Map to Dissertation

Chapter one presents a precis of the project. It presents the hypotheses and explores the significance of the research questions and describes the organizations that supported the funding of the fieldwork. This chapter gives a brief overview of the existing theoretical arenas of the relationship among human impact and tropical forests--natural resource management--and the importance of credit as insurance toward smoothing consumption. This chapter also gives an introduction to the recently created Korup National Forest and to the study methodology used in this research.

Chapter two presents a review of the theoretical literature on the use of forest resources, conservation, and access to credit systems. Chapter two also presents an overview of current theories of ecology in relation to the Korup Park Zone, the environment, why

people use various resources, and how international mandates on conservation may affect patterns of forest use.

The theories that form the foundation for the development of community forestry programs participatory approaches to natural resource management techniques, and informal and formal credit systems are examined. Chapter two also explores how community forestry programs in response to international mandates on conservation, are used as a means to achieve these conservation goals An overview of current theories of rural and formal access to credit systems and the implications of access for smoothing consumption in the face of adverse shock, risk or uncertainty are presented This chapter also examines the various definitions and functions of the household.

Chapter three presents the complete methodology and original overview of the implementation of this research project. This chapter presents the original research design and the anticipated sequence of events compared to what transpired. This chapter explores the constraints encountered in the field when implementing the research design and how these constraints may have affected the data collection and analysis Concluding this chapter are lessons learned while doing this research and methodological recommendations for future research

Chapter four discusses the concerns and importance of the Korup National Park (KNP) as a global natural resource in need of world attention and preservation This chapter explores KNP s history physical environment administrative operation, conservation policy and status as of March 2000

Chapter five describes the villages and settlement issues of Korup National Park On a local level this chapter identifies the people and places of the Korup National Park within the

South West Province of Cameroon This chapter also lists the general differences among the various people, the ethnicities and the locations that were researched within the Korup National Park.

Chapter six distinguishes the range of economic opportunities within the KNP, including trade, logging, cropping, hunting and gathering, remittances, the various forms of indigenous credit and other forest enterprises. This chapter further explores the general use of local natural resources, traditional and non traditional, and the income strategies that depend on them.

Chapter seven details the variations of wealth and income sources, and how these variables are achieved regionally. This chapter further emphasizes specific patterns of village economics, forest use and the diverse forms of resource development and management that occur in Korup National Park. Concluding this chapter are the perceptions of health and attitudes toward the use of forest resources.

Chapter eight illustrates the various forms of available credit found locally. This chapter details the importance of indigenous credit schemes, formal and informal, as well as all available sources of credit, and the variety of organizations that offer it. Concluding this chapter is a section regarding the range of shocks experienced regionally, normal year strategies, specific shock responses and the available alternatives to mitigating the consequences in both good times and bad.

Chapter nine examines the individual variables included in the original design of the proposal. In this chapter are the direct results of the testing of the hypotheses. Chapter nine concludes by outlining the importance of various forms of formal and informal credit and contrasts these variations with natural resource use.

Chapter ten summarizes the research project and discusses the research question. This chapter presents a summary of the proposal methodology in contrast with field modifications to the proposal, past project findings and statistical results. This concluding chapter suggests further areas of study and deals with the potential application of these research findings to natural resource management and the support of indigenous credit and rural empowerment

CHAPTER 2
FOREST USE CONSERVATION AND BIODIVERSITY

Introduction

Chapter two is divided into two parts Part one presents a review of the current themes and theoretical perspectives on conservation and the use of forest resources Embedded in this perspective is an explanation citing ecological and environmental motivations for why people use various resources, and how international mandates on conservation may have an affect on patterns of forest use. This section also explores how community forestry programs, as a response to international mandates on conservation are used as a means to achieve these conservation goals Finally part two presents an overview of the current theories on rural and formal access to credit systems and the implications for smoothing consumption in the event of adverse shock risk, or uncertainty This chapter ends with a discussion of the conceptual issues regarding the diverse definitions of "household." This section will compare and contrast the various historical and current definitions distinguishing the divide between classic economic and anthropological theory relating to the customary unit of analysis, the definition of the household unit This is important as a source of reference because measuring the unit of analysis is affected by its very definition

Part One

Consumption and Uncertainty

For the purposes of this dissertation, and in almost all the literature on inter-temporal choice decisions are made with respect to consumption which is usually

defined as a constant price aggregate of expenditures on a long list of goods and services (Deaton 1992) From a theoretical perspective the ultimate objects of consumer choice are these individual goods and services, not the aggregates.

According to Deaton (1992) one of the distinguishing features of recent research on consumption has been the way in which a coherent account of uncertainty has been introduced into the analysis As far back as the 1950s theories on permanent income and lifestyle recognized the importance of uncertainty expectations and the understanding of a need to re-plan in the face of new information (Friedman 1957 Deaton 1992) Nevertheless, in economic theory, the formal treatment for uncertainty did not exist until recently

In the presence of uncertainty and risk, it can be assumed that plans can sometimes become frustrated, or even go unfulfilled Even for identical individuals with identical initial inheritances, wealth or identical prospects, there will be a different pattern of lifetime consumption Some people are fortunate, having access to dependable sources of income and favorable investment opportunities, while others may make bad decisions get bad news, or have bad luck, and thus have to lower consumption levels Deaton points out that the effects of uncertainty will become cumulative over time, with consumption trajectories typically diverging even for a group of initially identical consumers

In developing nations, uncertainty and risk associated with events such as illness catastrophe (e.g. drought flood, war etc) the outbreak of pests market or political instability frequently affect the income of rural households and, hence, also affect consumption Over the centuries, rural households have developed complex institutional arrangements to protect themselves from these unanticipated events that can produce

hardships (Wong and Godoy 2002) To minimize losses, rural households take precautionary steps before, and draw on various safety nets after, mishaps strike (Morduch 1999) Some of these precautionary steps include agricultural intercropping strategies staggering planting schedules, income diversification strategies (e g hunting non timber forest product collection marketing etc) risk pooling and reciprocity within and across villages to weather out lean spells These approaches – diversifying income sources or divergent agricultural tactics – help to weave a comprehensive safety net to protect consumption during ordinary years

If rural households miss the opportunity to take precautionary measures before misfortune strikes they tend to rely on many other forms of informal insurance after the hardship These households may draw on extended networks of remittances, some from migratory household members (James 1997), gifts and loans (Winterhalder 1996 1997) savings (Deaton 1997) their own assets (Rosenzweig and Wolpin 1993) revolving cash clubs or an intensification of the use of the natural resources found in proximity to their settlements As a final measure, some may resettle to a new area entirely but this requires some store of resources as well

There is no conclusive evidence of the effectiveness of these informal insurance mechanisms at protecting households The variation in their effectiveness may be a result of or a consequence of, the size, the location or specific type of shock experienced Evidence from Asia and Africa suggests that particular income shocks affect consumption differently (Morduch 1995) Conversely other evidence suggests that, typically farming households protect themselves well against small and medium shocks, such as crop losses, mild illnesses drought and rainfall fluctuations, but not against large

or covariate shocks (Gertler and Gruber 2002, World Bank 2001 Wong and Godoy 2002)

Examining the range and effects of mishaps that households face helps toward understanding the effectiveness of available insurance mechanisms This understanding has definite implications for smoothing consumption in the face of calamity for rural households Households experience many types of blows Some of these misfortunes include losses of crops from theft, pests diseases, and bad weather When ordinary mishaps occur, or any singular household shock ordinary insurance mechanisms plus the diversity of income sources, usually suffice When combinations of household shocks occur or unexpected loss, or calamity available options for smoothing consumption become strained, inadequate or even restricted.

The yields of these mechanisms are usually quite limited and may not be very effective or reliable for an extended period of time Therefore options diminish or become less adequate as a real assurance against calamity These mechanisms for smoothing consumption however adaptive they may appear to cope with households-specific shock during ordinary years may be completely unsuitable for sheltering households during volatile years or circumstances

The effects of uncertainty loss and the value of natural resources in this context as an insurance buffer, have not been thoroughly examined in the current literature. Two of the gaps this research seeks to address are the adequacy of informal insurance mechanisms (e g., use of forest products, reciprocal provisions, coping mechanisms etc ,) in buffering consumption in the face of misfortune and whether access to credit may have a positive effect in smoothing consumption while restraining intensified forest use.

Smoothing and Risk Insurance Options and NTFPs

The literature shows that rural households with limited credit and insurance options diversify their economic activities to smooth income fluctuations (Morduch 1995 Godoy et al , 2001) For example, households may have intermittent off farm work that can provide cash, establish buffer stocks, cultivate different fields grow a variety of crops vary fallow times and crop sequences, and possibly invest in forest tree resources The degree to which households pursue income smoothing depends on both the level of risk they face and their ability to smooth consumption after shock for example by liquidating assets seeking remittances from off farm family members or collecting wild products or non timber forest resources (Pattanayak and Sills 2001)

Households regardless of their socio-economic level or life cycle stages may exhibit different attitudes and responses to risk because of different levels of risk aversion exposures to risk, or abilities to smooth consumption (Pattanayak and Sills 2001, Morduch 1995 Rosenzweig and Binswanger 1993) A household's options may include the use of non-timber forest products (NTFPs) and wild forest products (WFPs) or any of the other options available in their economic portfolio In this study, the various options integral for households seeking to smooth consumption in the face of adverse risk or shock are measured against the availability of credit

Forest Resources and Conservation Debate: Alternative Approaches to Preservation

The world is becoming increasingly globalized economically environmentally and culturally (Karunaratne and Tisdell 1996) Much has been contributed to the mounting body of literature exploring relationships among global forces local processes in tropical deforestation and environmental degradation (Blaikie and Brookfield 1987 Redclift and Goodman 1991) A growing number of ecological scholars have addressed the complex

impacts of the larger social structures and political-economic processes on local strategies of resource use (Nygren 2000 Peet and Watts 1996) They tend to stress that, to understand deforestation as a social process it is also necessary to recognize the unequal relationships of power and how these relationships affect access to resources and their control (Nygren 2000)

A mounting number of national parks have failed to reverse the uncontrolled decline in biodiversity throughout the tropics Mayaka (2002) argues that at the root of the paradox is ineffective state protection against encroachment coupled with the hostile reaction of local populations to a myriad of negative effects (Mayaka 2002 Naughton Treves 1999 Nepal and Weber 1995 Nauman 1992) Kandeh and Richards (1996) maintain however that conservationists are just imagining a straightforward opposition between people and biodiversity Blaikie and Brookfield (1987) point out that environmental problems in the Third World are less the result of poor management, overpopulation or ignorance, than of social action political-economic constraints and global inequalities

Schmink and Wood (1992) further the debate by adding that natural resource utilization is a social process where different interest groups, with diverse needs and often conflicting intentions, confront each other on the local, regional, national, and global levels. Agarwal (1992) maintains we cannot simply analyze people's resource management strategies as something determined solely by the local culture, the focus must be on examining these strategies in relationship to historically shaped relations of production and power (Agarwal 1992 Nygren 2000)

Alternative approaches to conservation have been used to provide local communities with economic incentives and the opportunity to participate in decision-making processes based on several methods of Community Based Wildlife Management (CBWM) (Mayaka 2002, Child 2000, Gibson and Marks 1995). Two examples of such institutions are the Communal Area Management Programme for Indigenous Resources (CAMPFIRE) and Administrative Management Design for Game Management Areas (ADMADE) in Zambia (Mayaka 2002, Child 2000, Gibson and Marks 1995).

To add to the complexity within the current debate of defining conservation to rural populations, Watts (1989) stresses that the history of deforestation can be seen as a process of change where "productive resources, property rights, and authority are struggled over," and in this struggle, local people alter their production strategies, as well as their perceptions of the environment, within a social context that is structured, but not determined. According to the changes in their natural and political ambience, locals try to create strategies of survival and resistance to improve their control over the utilization of natural resources (Nygren 2000). No matter how degraded people in this relationship might be, they still preserve a certain potential for creativity and space for maneuver (Torres 1992, Verschoor 1994).

The opinions of economists differ about the extent to which preservation of natural resources is necessary for sustainable development and conservation. Those supporting strong conditions for economic sustainability argue that natural environments need to be preserved and that substitutions of man-made capital for natural environmental resources may well result in unsustainable development (Tisdell 1997). Alternatively, those

favoring weak sustainability conditions are sanguine about such substitutions (Tisdell 1997)

It is sometimes argued that, if local people are empowered to take care of their own affairs, they are more likely to conserve natural resources than if decisions are forced on them by a wider society. Whether this will happen may vary, however. Where a local community is empowered, it is more likely to pursue its own self-interest than when it is lacking in such power (Tisdell 1997). Tisdell (1997) further points out that if a community's perceived interest involves the conservation of resources, then these resources are likely to be preserved. However, not all local communities may see their own self interest as being best fostered by natural resource conservation, particularly if conservation supplants access to precious resources.

Tisdell also remarks that local communities in some circumstances are eager to exploit natural resources for their own economic gain and do not always champion the cause of resource conservation. This is even more likely when local economic interest groups dominate local communities. Conversely, there are instances where the centralization of control over natural resources has accelerated the exploitation and deterioration of local environments, while in other cases central control has forced local communities to conserve more natural resources than they would otherwise choose to do (Tisdell 1997).

Conservation Dilemma

The range of discourse surrounding issues of conservation is evident, as is the escalated loss of biological diversity as a result of mismanaged conservation efforts, no matter how well intentioned. Mainly developing from the 1970s, this escalating loss of biological diversity has sparked discourse that has become increasingly entangled within

key scientific, political, and social policy issues, and has been progressively addressed by economists, ecologists and anthropologists alike.[5]

Mounting global awareness of this loss has stimulated a formal international convention that is struggling to delineate biological diversity in order to take measures to preserve it. This convention, effective December 1993, required all contracting parties [governments and key international institutes responsible for policy] to develop a national strategy, program, or action plan, for the conservation and sustainable use of biological diversity, limited to the discretion of the contracting parties (Perrings and Lovett 1999). In other words, the accountability and protection of an area is solely the responsibility of a community, or country, that may directly benefit from its very value. This leaves much of the decision-making power regarding conservation in the hands of those who may not necessarily be conservationists, or who until recently had little regard for conservation efforts, unless in terms of wholesale profit.

Africa's protected areas are critical to the conservation of the continent's biological diversity (Ehrlich and Daily 1993, Robinson 1995, Myers 1996), if not alone sufficient enough to conserve it (Infield and Namara 2001). Of particular concern to conservationists is the fact that efforts involved in increasing classifications and the management of protected areas often bring hardships to poor rural communities living in or around them (Calhoun 1991, Ghimire and Pimbert 1997, Infield and Namara 2001). These hardships result in a substantial loss of economic opportunities, increased

[5] Biological diversity is defined in the Convention on Biological Diversity as "the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexities of which they are part: this includes diversity within the species, between species, and of ecosystems" (Reid et al., 1993 in Orlove and Brush 1996).

exclusions [and expulsions] from protected area resources, and the damage caused to rural farms and livestock by wild animals (Calhoun 1991 Parry and Cambell 1992 Ghimire and Pimbert 1997 Naughton-Treves 1998 Infield and Namara 2001)

The Invention of Biodiversity

The term "biodiversity" came into general use through the work of the distinguished American biologist E O Wilson From the outset the term was as political as it was biological Wilson explained that the term was his attempt to try and protect a specific academic interest in whole organisms from the radical reductionist currents in molecular biology then threatening to "rule the roost" (Guyer and Richards 1996)

Biological diversity in its broadest sense means the variety of life Specifically we refer to biological diversity, or biodiversity as the number of species genetic diversity or the variety of environments, or ecosystems where species or genes are to be found Conversely biodiversity loss implies the loss of ecosystem services supported by the eliminated species (Perrings and Lovett 1999)

The conventional argument about biodiversity tends to play out as follows Pristine environments are naturally rich in biodiversity and unknown biodiversity tends to a maximum in localities (Guyer and Richards 1996) Many ecologists argue that the stability or productivity of ecosystems is maintained by high biodiversity (Tinker 1997) The result is that this unknown biodiversity is potentially valuable on various levels [6]

[6] Guyer and Richards (1996) suggest a contrary argument wherein many parallel life forms may have evolved within the especially favorable tropical rainforest environment, and that keeping all these forms afloat may one day prove to have been an expensive and politically harmful exercise in redundancy at the expense of concentrating on what is already known and cherished

The concept is in some ways an odd one since biodiversity is quantitative without necessarily being quantifiable (Guyer and Richards 1996). Guyer and Richards (1996) compare the concept of biodiversity to that of an iceberg – most of it hidden from view (like the underwater portion of the iceberg) and indefinite in shape and extent. A probable model of the portion of global species biodiversity found below the surface of the iceberg is often expressed in the form (estimates vary) 1-5 million species known to science, 5 million (or 30 million) yet remaining to be discovered (Primack 1993, May 1992). The ride to this surprising formulation is that most of the unknown species are probably insects and moss as yet to be identified in the tropical rainforest (Thomas 1999, Guyer and Richards 1996). No one knows the true scope of biodiversity – how many species of plants and animals share the planet with human beings. Most estimates put the number at somewhere between 10 and 30 million, with some consensus around a figure of 14 million. Nevertheless, only about 1.7 million species – a small share of the total – have been identified and categorized, while even fewer have been studied (Population Reports 2000).

Guyer and Richards (1996) maintain that to talk of describing the unknown portion of the iceberg is not entirely ludicrous and is rooted in eighteenth century Kantian philosophy:

> The eighteenth-century German philosopher Kant argued that the significance of advancing from the concept of the earth's surface as 'plain' indefinably extended to that of a globe was that it puts bounds on human ignorance. Adding to the idea that the earth was a sphere of a certain size, information of the known (landward) portions of the globe meant that the extent of the unknown oceans could be estimated. Columbus had the arithmetic wrong, which is why he arrived in the Americas and not (as he supposed) in India; but the right geometrical idea.
>
> Richards 1974 in Guyer and Richards 1996

Biologists also maintain the same supposition of this argument when they describe in quantitative terms, the biodiversity yet to be discovered, since they have a general idea of the scope of the world s diverse ecosystems environmental variations, and knowledge about how comprehensively or sparsely each zone has been surveyed, in relation to the rate at which new species are encountered when exploring little known ecosystems Concepts of biodiversity its scope, its protection and its future are intricately woven into theories of information about eco-zones and habitat

Threats to Biodiversity Discourse

Considering a conventional view of biology linked with neo-Malthusian ideas of demography, where habitats can be grouped into two great classes – those that are modified (and generally simplified) by human involvement (e g. an area of forest partially or largely cleared for cultivation or subsistence) and those that are still in some pristine state untouched by human activity – then any increase in human population causing a loss of natural habitat, is seen as the greatest single threat to species diversity in the modern world, and rigorous exclusion of human activity in the remaining pristine areas as the key to the defense of biodiversity (Guyer and Richards 1996) The point is that uncontrolled habitat loss is a major threat to African biodiversity citing the traditional conservationist stance that human population growth is always necessarily (by virtue of the way it works) the main threat to the survival of wilderness resources

Kandeh and Richards (1996) in research reconsidering biodiversity and human interaction in Sierra Leone, maintain that there is the possibility that, in some cases human management of African landscapes has definite benefits in terms of biodiversity They suggest that human involvement in the shaping of landscapes in Africa has, in many cases, a longer history and is a more intimate process than current conservation literature

supposes and that fully working out such human involvement through a focus on landscape history and dynamics may be the key to identifying points of common interest and sentiment around which local and external conservation interests may one day coalesce (Kandeh and Richards 1996 Child 2000 Gibson and Marks 1995) In effect Kandeh and Richards stress that this discourse amounts to a call for African and Africanist geographers, demographers anthropologists, historians and archeologists to become fully engaged in drawing up national landscape histories in order more securely to ground policy debates about biodiversity conservation priorities and processes

Equally Fairhead and Leach (1995) argue that, as Sayer (1992) puts it "the hard fact is that most aid projects and especially those in forestry fail," and misleading narratives are fundamental to this failure. This perspective is focused on the argument that social sciences have no monopoly over social-environmental visions in which a forest's past has become a moral past Social scientists have become complicit in producing a view of history as one of increasing tension from a harmonious past Treating this past as a model with a set of objectives for the resolution of today s tensions they have been forging links between social and environmental conditions in a way that assists in relieving those subjected to their study of what little resource control they actually have (Fairhead and Leach 1995) From this viewpoint Fairhead and Leach stress that there is no basis for identifying a region's fundamental archetypal vegetation as it is in continual transformation, and its trajectory is determined by the legacy of past vegetation paths and ecological concerns

Also apparent in this spectrum is the idea that concepts of biodiversity can be described as a collection of perceptions about landscapes straddling a gamut of knowledge ranging from complete ignorance to initiatives of crisis conservation. This point of view transforms conservation discourse to radical exercises in conservation mitigation that mimic the methods and the expediency used by disaster relief practitioners. Guyer and Richards (1996) reinstate the real debate about what biodiversity should and might mean, arguing that this debate has fallen victim to crisis talk in conservation circles, an occupational hazard to which conservationists are as vulnerable as relief agency personnel.

Biodiversity through the Ethnographic Lens: Conservation Utilization Debate

National policies of conservation, as part of a strategy of park management, have an historic and complex relationship with indigenous populations that seek to use these natural resources, although the professional standpoint from which African biodiversity is viewed is still predominantly expatriate (Guyer and Richards 1996).

As an example, the issue of ownership of wildlife and access rights to natural resources lies at the very center of the conservation and utilization debate. It has been argued that very little work has been done specifically on the anthropological aspects of wildlife management as it is envisioned in western thought (Gilbert and Dodds 1987).

Hasler (1996) maintains that the notion of holism in the anthropological method refutes this idea, citing that ethnographies are accounts of various ways of life. And the use, management, symbolism and cultural significance of animals and plants are integrated into countless chapters in ethnographies focusing on issues other than wildlife management. Therefore, anthropology is no stranger to the subject and the

anthropological lens has enlightened many wildlife managers (Gilbert and Dodds 1987, Hasler 1996)

It then follows that, within the local context, anthropologists and their study may helpfully identify the larger plans envisioned by resource managers and ecologists amid the perceptions culture history and political and economic arrangements of the people affected Wildlife as it is usually alienated through protectionism may be perceived as a menace to villagers as a threat to their existence and security, continually destroying their crops and raiding their livestock or killing and injuring members of the community Wildlife may also pervasively influence community decisions or designs sleeping or travel arrangements or other village infrastructure On the other hand wildlife also has both material and symbolic positive value for example, its relevance in terms of ancestral belief systems, or the secret and illegal hunting opportunities it may offer (Hasler 1996)

Traditional and Historic Management Systems in Africa

Conservationist literature frequently claims that Sub-Saharan African forests have been subject to rapid rates of recent deforestation largely as a result of shifting cultivation timber extraction and human expansion For several centuries farmers who lived and farmed at the edge of a forested landscape with wild animals of extraordinary diversity and density traditionally tried to balance crop loss to mammals with bushmeat gains by trapping animals in and around their fields This was the commonplace practice that existed among African forest farmers (Koch 1968 Vansina 1990) Other coping strategies included planting widely dispersed fields guarding and rotational planting (Naughton-Treves 1997) Nevertheless, crop damage by wildlife particularly elephants,

prevented the cultivation of some arable land (Osmaston 1959 Vanuna 1990 Naughton-Treves 1997)

Linked strategies of farming and hunting were decoupled in the early part of the twentieth century when most colonial authorities in Africa, and specifically in Cameroon, prohibited so-called native hunting and declared all wild animals the sole property of either the crown or the administrative body (Graham 1973 Naughton-Treves 1997) From the late 19th century to the mid 20th century nation states and colonialism became the driving force behind the rise of modern conservation largely as a result of resource shortages and conservation (Western 2001) Restricted areas and enforcements slowed this process, and still do but times have changed and so have the challenges to conservation

In many parts of Africa, colonial administrators set up systems to protect areas as game parks for elite hunters. These administrators initiated militaristic campaigns to eradicate problem animals including elephants hippopotamuses and leopards, so that the agricultural frontier could expand (Brooks and Buss 1962, Graham 1973 Naughton-Treves 1997) During subsequent decades, the combined impact of increased colonial control, the ivory and fetish trades deforestation civil war and agricultural expansion removed large animals from many of their natural habitats

Writing in 1931, Albert Sarraut former governor of French Indo-China found mankind confronted by a dilemma

> While in a narrow corner of the world nature has concentrated in white Europe the powers of invention the means of progress, and the dynamic of scientific advancement, the greatest accumulation of natural wealth is locked up in territories occupied by backward races who not knowing how to profit by it themselves, are even less capable of releasing it to the greater circular current that nourishes the ever growing needs of humanity

Spurr 1993 in Agrawal 1997

Clothed in a veil of progress, and designed to unleash a greater good for humanity... Sarraut's observation does not quite manage to conceal his endemic imperial impatience when confronted by obstacles in alienating resources controlled by the 'backward races'

Marks (1984) in his book *The Imperial Lion* provides a cultural ecological analysis of the indigenous hunting systems among the Valley Bisa in Zambia. Along with this analysis, Marks demonstrates how localized wildlife resources in Africa have been exploited by outsiders (e.g. urban dwellers, the north). Marks (1976) notes in an earlier work *Large Mammals and a Brave People: Subsistence Hunters in Zambia*, lineage-based systems were sanctioned by ritual processes and collective controls. Marks claims that as long as such rural societies remained relatively isolated, with low human densities and technologies adequate to meet local demand, "their environmental resources were usually adequate" to meet their needs (Marks 1984, Hasler 1996). However, with the relaxation of previous traditional restraints, these types of collectivist controls over wildlife resources rapidly destabilized, and opportunities for private gain subverted the "traditional wildlife resource processes" (Marks 1984). The impact of commerce and state-sponsored initiatives contributed to the situation where "wildlife is increasingly mined [i.e. depleted] rather than harvested" (Hasler 1996). As a result, we cannot pretend to assume that humans and nature can live apart, or that we can isolate fragments of nature in protective custody. We now live in a human dominated world where no species or ecosystem is beyond our influence (Science 1997, Western 2001).

Systems Analysis of Traditional Hunting Restrictions

Marks and Hasler describe the theoretical orientations that are significant in understanding micro-level systems analysis and the broader political and economic

processes within which the micro-level system changes or breaks down. Hardin (1987) also explains in his article that elements describing a 'tragedy of the commons" are a characteristic of "state systems where the desire for profit or individual aggrandizement motivates uncontrolled exploitation" (McCay and Acheson 1987 in Hasler 1996) [7]

The systems orientation is prevalent in the writings of many cultural ecologists (see Dice 1955, Geertz 1959, Holling 1973, 1986, Moran 2000). This systems approach stresses the idea that traditional societies, in particular "hunters–gatherers", have developed cultural institutions and practices designed to allow them to achieve a homeostatic equilibrium within their own environment (Odum 1971, Hollings 1973, Rappaport 1984) [8]. However, this notion of traditional societies having an innate equilibrium that is environmentally friendly is arguably controversial too. Hasler (1996) stresses that, apart from the difficulties in defining what exactly a "traditional" society is, in a changing world "equilibrium" models in anthropology (and especially cultural ecology) have been severely and consistently criticized for being ahistorical, ignoring wider political and economic issues, being tautological, and failing to deal with conflict, change, and cultural rules (Harris 1974).

Marks, Able and Blaikie (1984, 1996) attempt to resolve these issues in a wider context by including other political and economic factors that may be a deterrent to achieving any systemic equilibrium. These include subsistence hunters, commercial

[7] In Garret Hardin's (1968) "tragedy of the commons", freedom in the commons becomes a tragedy for all, but he interpreted common property as a free-for-all, when in fact the system of common property comprises structured ownership arrangements within which management rules are developed, group size is known and enforced, and incentives exist as do sanctions to ensure compliance.

poachers wildlife conservationists tourists politicians, the bureaucratic bourgeoisie and safari hunters Abel and Blaikie stress that it is not enough to look at local communities in isolation from the historical and contextual factors that encroach on their way of life (1986) And in terms of conservation, national parks are edifices of what is now considered to be inappropriate management strategies from the colonial past (Hasler 1986), where many people, including examples discussed in this research have been dispossessed of their land and resources when the latter were declared protected areas by the state

Citing the example of Albert Sarraut it becomes obvious that the colonial state did not pretend to understand how wildlife had been managed by traditional societies [9] With an approach based on absolute rule and an historical experience in their own countries based on absolute exploitation until depletion, the colonial concern mainly focused on their own ideas of how game should be owned managed and used to meet their own needs at the expense of any historical lessons in managing a limited or fragile resource

Management of wildlife changed from community (local) property to state (alien) property centralized to the hands of the government. Local people were treated as trespassers and poachers in these newly established communal areas where previously they had enjoyed free access to the same land and its resources Based on these early colonial structures the indigenous people specifically Africans faced restrictions from an outside authority that denied them the right to use resources as they saw fit Policies developed by outsiders were based on coercive forms of protectionism that ignored the

[9] Homeostatic equilibrium does not imply changelessness but rather constant adjustment of system parts and even some change in structure (in response to perturbations) (Rappaport 1977)

needs of African people (Metcalfe 1995). Elements of these restrictions included prohibitions on hunting, protected species designation, and game reserve establishments which usually excluded local people outright from protected areas (Carruthers 1993).

Community Based Conservation (CBC) and Community Based Natural Resource Management Systems (CBNRM)

The concept of participatory or community based conservation for forest management became very popular in the late 1980s. It developed out of a purely protectionist approach to biodiversity conservation, that integrated strategies sometimes referred to as "fences and fines" (Songorwa 1999; Barrett and Arcese 1995). Many of these schemes simply reshaped earlier methods of exclusionary environmental policy. Inamdar, et al. (1999) points out that these were purely protectionist approaches to biodiversity conservation that quickly became widely unpopular, especially within the international conservation community. Thus, traditional protected areas (PA) were suffering from a public relations crisis as a result of these historical methods of "fortress conservation."

Some of the causes of this crisis included the high economic costs of maintaining the exclusionary "fences and fines" approaches to conservation (Leader-Williams and Albon 1998), the low economic returns from protected areas compared with alternative human-settled land uses (Norton-Griffiths and Southey 1995), and the strength of political voices claiming that the exclusion of local people from parks was variously unfair, unreasonable, and/or illegal (Neumann 1998; Adams and Hulme 2001).

Adams and Hulme (2001; 1998) further argue that this disenchantment with "fortress conservation" has indeed been so profound in the global conservation

[4] Albert Sarraut, former governor of French Indo-China

movement that there has been a significant shift in the dominant "narrative" of conservation. Rising from these ashes came a new conservation narrative, or community conservation movement (CCM), emphasizing that community conservation cannot and should not be pursued against the interests and wishes of local people.

This new narrative has been so widely adopted that it is now the dominant paradigm just about everywhere. Consequently it is also seen as the obvious answer to the dilemmas and the disappointments of conservation policy, particularly in the rural Third World (Adams and Hulme 2001). The ideology of community based conservation stresses that conservation must be "participatory," must treat protected area neighbors as "partners," and preferably must be organized so that protected areas and species yield an economic return for local people and the wider economy, and must contribute to sustainable livelihoods. Other alternative approaches stress that conservation must also provide local communities with economic incentives and the opportunity to participate in the decision-making processes (Mayaka 2002, Child 2000, Gibson and Marks 1995).

While adding to the complex and dynamic terminology, each of these initiatives also carries an assortment of apposite labels. For example Integrated Conservation and Development project (ICDPs), Community Conservation Programs (CCPs), Community Based Conservation (CBC), Collaborative or Joint Management Ventures and Community Based Natural Resource Management (CBNRM) (Barrett and Arcese 1995, Adams and Hulme 2001, Western 2001) and Community Based Wildlife Management (CBWM) (Child 2000, Gibson and Marks 1995).

Many of these various methods, specifically the ICDP approach to conservation in Africa, have gained popularity for three main reasons. One reason is the recognition that

wildlife populations in Africa have declined dramatically over the past thirty years, primarily because of habitat loss (Newmark and Hough 2000). Surveys suggest that over 65% of the original wildlife habitat in Africa has been lost (Kiss 1990) as a result of agricultural expansion, deforestation, and over-grazing, all fueled by rapid human population growth and poverty (Newmark and Hough 2000). Adding to this tragic loss is the recent escalation of subsistence wildlife hunting to full fledged commercial trade in bushmeat for profit. Newmark and Hough (2000) maintain that given these underlying determinants of habitat loss, conservation activities in the field must be intimately linked with rural development.

A second reason for the popularity of ICDPs relates to the challenges of conserving biodiversity within the existing protected areas throughout Africa. These protected areas are becoming increasingly isolated ecologically, typically as a result of intensified agricultural development alongside buffer zones, deforestation, escalating human settlement, and the active elimination of wildlife on contiguous lands. These trends, in combination with the small size of most protected areas, indicates that, in the absence of intensive management, most protected areas in Africa will not be large enough to conserve many species (Newmark 1996). In addition, rural poverty and external markets will continue to encourage both subsistence and commercial poaching of many species within protected areas (Newmark and Hough 2000).

A third reason for the popularity of ICDPs is that these types of programs are perceived as an effective mechanism for addressing problems of social injustice and historical strategies of exclusion. Protected areas have adversely affected many indigenous populations. Many donors view ICDPs as a means to develop or at least

maintain relationships with the communities that must bear much of the social costs of protected areas (Newmark and Hough 2000) Associated with this is the recognition that past methods of management have been ineffective in curbing poaching Efforts by conservationist donor programs and governments to reduce poaching have created confrontational relationships with local communities. Former approaches to conservation were seen as anachronistic and counterproductive and many conservationists view the ICDP approach as a valid alternative (Newmark and Hough 2000)

Safety Nets and Social Factors

Mayaka remarks (2002) that after two decades of experimentation, these new approaches are now undergoing a critical assessment revealing the weaknesses that have emerged so far (Gibson and Marks 1995) This includes failed delivery insufficient incentives, and lack of power devolution and in some cases persistent loss of biodiversity (Mayaka 2002 Gibson and Marks 1995 Fabricius Koch and Magome 1999 Roe Mayers Grieg-Gran Kothari and Fabricius 2000) Mayaka (2002) stresses that these flaws stem from the underlying assumptions and implementation difficulties rather than the philosophy of the Community Wildlife Management programs

To date there are few examples of systemically successful projects The chief reason is that even if a project is successful in increasing revenues in the short run to levels that allow people to withdraw from destructive forest practices they often fall back on the forests as a safety net in a time of crisis One of the key challenges to conservation research today is to better understand this interplay between preserving fragile environments economic "crisis" and conservation strategies Gibson and Marks (1995) also argue that even the economic incentives that many ICDPs offer are often ineffective

because project designers frequently overlook the social importance of many indigenous activities, such as hunting.

Conscious that many project failures in the past have been related to a lack of attention to social and cultural factors, large development institutions, such as the World Bank and the Food and Agricultural Organization (FAO) have adopted newer methods for collecting and integrating data with hopes of improving on this disappointing history (Cornwall et al. 1994). These newer methods, (e.g. Rapid Rural Appraisal [RRA], Participatory Rural Appraisal [PRA] and Participatory Action Research [PRA]) have all developed alongside the growing interest and respect for indigenous knowledge and challenges to top-down approaches to development projects and extension (Chambers 1994).[10]

Meanwhile in the social sciences and humanities, theoreticians have begun to destabilize the construction of the academic as a "collector" and "scientific" analyst of knowledge of facts. Instead, the researcher is pictured more as a facilitator of knowledge creation a self-conscious interpreter of complex, often competing "stories" (Goebel 1998). For an uncompromised research this new shift demanded the use of methodologies emphasizing in-depth interactions between researcher and "research subjects", and interrogating the categories and biases imposed by the researcher. Parallel to these largely progressive changes was the desire particularly in the world of donor initiated development projects and rural extension bodies to get quick social and cultural

[10] PRA has grown out of older RRA methods which were developed to replace the quick and dirty' "development tourism" described and critiqued by Chambers. RRAs were developed as a means to increase the quality of socio-cultural information gathered for project use while respecting the time and budget constraints of donor efforts. RRA was designed to be essentially "extractive" in nature.

information to satisfy the requirements of a project document or a departmental decree (Goebel 1998)

While visibly an alluring idea to conservationists, policy makers and the general public, community conservation is no panacea. It can be problematic in its implementation and realization. Recently, critiques of ICDPs and "conservation-with development" projects have become more apparent (Barrett and Arcese 1995)

There are two very different opinions. One stems from a position that is highly suspicious of the principles and practices of conservation (Adams and Hulme 2001) and detects "community conservation" as a shallow, even deceitful façade designed to hide the old-style preservation, with its harsh colonial legacy of policing, eviction and misanthropy (Mackenzie 1987, Neumann 1997, Adams and Hulme 2001)

The second position envisions 'community based conservation' as a fatal weakening of resolve on the part of conservationists, and fears that efforts of preservation of species and ecosystems will be compromised by placing any measure of control in the hands of wildlife's greatest enemies – local people (Spinage 1989). To these "conservatives" or "traditionalists", community conservation is an expensive and ineffectual distraction from the established approaches to conservation, e.g. scientific management and policing (Adams and Hulme 2001). On the fence, amid both positions, Hackel (1999) suggests that community based conservation methods can be seen as a response to both alienating protectionist policies of the past and to the economic concerns that many rural people have as a result of the restrictions they once faced (Hackel 1999, Owen-Smith 1993)

Barrow and Murphree (2001) envision the community based conservation debate on a continuum with a wide diversity of projects and initiatives. At one end of this spectrum are initiatives designed to support state park management and their conservation schemes. Here community conservation has replaced traditional "protectionist" fines and fences strategies around protected areas (Barrett and Arcese 1995; Adams and Hulme 2001; Western and Wright 1994). In the middle of the community conservation continuum lie projects involving "collaborative management" (Barrow and Murphee 2001) among the state, the local community, and sometimes the private sector (Adams and Hulme 2001).

At the other end of the continuum lie initiatives to achieve rural development through the use of wildlife, or other living resources, in places unconnected with protected areas. Here biodiversity conservation is a secondary benefit of a sustainable ecosystem management and resource use system. These projects are conventionally labeled CBNRM projects (Adams and Hulme 2001).

Erroneous Assumptions

According to Newmark and Hough (2000), it had been argued that local communities are generally seen as hostile to protected areas, that raising the living standards of the nearby populations will inevitably result in conservation, and that buffer zones are panaceas – all erroneous assumptions that are detrimental to the success of ICDPs (Newmark and Hough 2000). Anderson and Grove (1987) argue that, because protected areas in Africa have historically excluded local people and have a colonial legacy, it is generally assumed that these areas are surrounded by hostile communities and enjoy little, if any, support among local people (Lusigi 1981; Wells 1996).

However, Newmark and Hough (2000) maintain that surveys in South Africa (Infield 1988), Rwanda (Harcourt et al. 1986), Tanzania (Newmark and Leonard 1991) and Nigeria (Ite 1996) show that an overwhelming majority of people living adjacent to protected areas in these countries agreed on the need for the protected area or were opposed to abolishing the parks or making them available for agriculture. Conversely surveys did show that most people living adjacent to protected areas in South Africa (Infield 1988), Botswana (Parry and Campbell 1992), and Tanzania (Newmark et al. 1993) held negative or neutral attitudes toward managers of protected areas (Newmark and Hough 2000). Additionally, these surveys found that local support or opposition to protected areas were based on utilitarian values (Infield 1988, Newmark and Hough 2000). Local people expressed support for protected areas because national parks and related reserves protected important watersheds, generated foreign exchange, or maintained critical hydrological functions (Newmark and Hough 2000). Similarly, local people expressed support for wildlife primarily because wildlife is viewed as a source of food. Those who held negative or neutral attitudes toward managers of protected areas did so because they felt that managers provided few services or benefits for their communities (Newmark and Hough 2000).

A second erroneous assumption – that improving the quality of life of people living adjacent to protected areas will essentially enhance conservationist attitudes within a protected zone (Wells et al. 1992, Wells 1996, Newmark and Hough 2000) – may also have its limitations. Studies show that there is a positive correlation between affluence and conservation attitudes in South Africa and Tanzania (Infield 1998, Newmark and Leonard 1991). However, it is unlikely that an improvement in the living standards of

communities near protected areas will inevitably lead to enhancing the long-term viability of many species within the protected areas (Newmark and Hough 2000)

Studies in Madagascar (Ferraro and Kramer 1997) show that hiring poachers in the Ranomafana National Park actually increased levels of poaching because these new employees used their earnings to lure more people to expand their poaching operation. Furthermore it is unclear whether species in protected areas that are threatened independently by habitat loss outside of these reserves due to agricultural intensification would be helped by an improvement in the living conditions of local communities (Newmark and Hough 2000)

Peripheral buffer zones are also a frequent method promoted in many ICDPs These management zones are supposed to enhance the environmental conditions of local communities through selective resource use, thereby discouraging habitat degradation and encouraging restoration. It is unclear how these goals are to be achieved (Newmark and Hough 2000) since none of the ICDPs that promote the use of buffer zones have explained how an already over-exploited area can be used to both increase productivity and provide additional habitat for wildlife (Little 1994)

The CAMPFIRE Program

One of the most often cited examples of a successful community based conservation and natural resource management program is Zimbabwe's Communal Area Management Programme For Indigenous Resources (CAMPFIRE). It has been so comprehensively reported in gray literature and progressively in the academic literature (Child et al. 1997 Hasler 1997 Adams and Hulme 2001 Simbanda 2001) that it has almost achieved iconic status among policy commentators

CAMPFIRE is a functional wildlife program that was developed to appeal to local populations by giving them a voice in natural resource management decisions and a financial stake in the preservation of wildlife (Hackel 1999, Murphree 1993). CAMPFIRE was promoted out of an effort to rectify the harm done by British colonial policies that centralized control over wildlife and diminished its value as an economic resource. During the colonial period African hunting was outlawed and local communities were prohibited from managing or benefiting from wildlife. Colonial conservation laws dating from the turn of the century effectively classified Africans' use of game as poaching. Even European farmers faced strict restrictions on hunting until the Parks and Wildlife Act of 1975 allowed landholders to exploit game on their land as "appropriate authorities" (Mackenzie 1987, Alexander and McGregor 2000).

White commercial farmers were the main group to benefit from legislation, although the Department of Parks and Wildlife Management also instituted a program in 1978 known as WINDFALL (Wildlife Industries Naw Development For All) through which African communities bordering on game parks were to be given a proportion of the returns from elephant culling. This later extended to newly established district councils and led to the start of CAMPFIRE, by giving these councils the right to exploit wildlife and other natural resources within their jurisdiction. Primary supporters of CAMPFIRE were the Department of National Parks along with a number of NGOs (Alexander and McGregor 2000).

By stressing the importance of local management and institutional development, CAMPFIRE was designed to rectify the shortcomings of its predecessor WINDFALL, by ensuring that communities participated in the generation of wildlife revenues rather

than simply acting as passive recipients of the revenue (Murombedzi 1992 in Alexander and McGregor 2000) Through CAMPFIRE the government of Zimbabwe found a way to make protected areas more relevant to their human neighbors, therefore recasting them as catalysts for regional development (Child et al , 1997) This approach added new debate over the compatibility of economic development and environmental protection

The philosophy behind the Zimbabwean CAMPFIRE program is that wildlife cannot survive in a developing economy unless its management can be economically self-supporting. To accomplish this wildlife conservation becomes another form of land use that needs to compete successfully with agriculture and ranching (Duffy 1997) in effect, this type of wildlife utilization takes on various roles a rural development strategy a commercial strategy; and a conservation strategy that provides resources such as meat or finance for development projects Supporters of CAMPFIRE claim the utilization approach to conservation has resulted in increases in wildlife overall a greater diversity of species on a wider area of land, as well as economic benefits for both private landowners and rural communities (Child et al., 1997 Duffy 1997)

In this respect CAMPFIRE offers an alternative to traditional management conservation Proprietorship and decentralized management of natural resources by rural communities is based on the premise that, if people 'own' the affected resources, and those resources are given a value then they will be used sustainably (Child et al 1997) This philosophy is not without its critics who argue from very different cultural, institutional and theoretical perspectives (Duffy 1997).

While conservation policies are often presented in terms of incontestable scientific management principles, they are also based on politically and ideologically informed

decisions (Duffy 1997) Conservationists in Sub-Saharan Africa have divided Ideologies concerning what constitutes good conservation practice Thus divide has created a mismatch between some international and western conservationist organizations and locally favored ideas of conservation through suitable use (Duffy 1997)

According to Hasler (1996) arguments hinge on three related assumptions. The first is that involving local people in the economic benefits of a resource management will make the resource more sustainable Associated with this assumption is that local people will actively participate in decision making and benefits, as they become proprietors of the resource. A third related assumption is that economic benefits targeted for local communities through district councils will actually reach the local community, implying that not all of the people will necessarily benefit and some may actually have further restraints imposed on their way of life (Hasler 1996)

Consequently many seek to discredit CAMPFIRE because these programs dispute the right of the center to control the periphery, and because they involve the killing of animals for profit. Hasler maintains that CAMPFIRE s emphasis on locally based communal property regimes may be misplaced because of the multiple levels and jurisdictions involved (Hasler 1996)

Also CAMPFIRE can be portrayed as a paradox how can killing animals be good for them? More distressing is that many of the critics of CAMPFIRE are local inhabitants. and the prospect of CAMPFIRE has threatened many of the adjacent villages with possible eviction Many local village councils "vehemently turned down" CAMPFIRE propositions citing that they can t reside with animals in their midst (Alexander and McGregor 2000) They stressed that the CAMPFIRE project was initiated

without their agreement, stating that CAMPFIRE "has come to destroy people" through land eviction and restrictions (Alexander and McGregor 2000). One evictee of the Filabusi people remarked that after independence from colonial rule they never received the benefits promised.

> When we came here we found people resisting destocking, and now comes this CAMPFIRE. One cattle graze there many people live there. We're going to be grouped together like buffalo while land is given to animals. This makes us think of war this is terrible. There's so much empty land. Forestry commercial farms – and they come here to where people are living. We didn't fight for people to be put behind fences. Look at us – we don't sleep, we're so thin because of what's happening to us now our souls are suffering now.
>
> Alexander and McGregor 2000

These types of discussion of grievances summarized a number of historical issues: the unmet promises of the liberation war; the parallels with colonial intervention and resistance; the backwardness of living with animals; of being made to live as animals themselves; and the lack of consultation with beneficiaries (Alexander and McGregor 2000). Based on prior experiences of eviction, adjacent populations did not trust the government or the newly elected district councils to compensate them for the investments they had made in community projects and homes. Hasler (1996) stresses that it is important to remember that wildlife management at the local level is not simply a question of "communitizing," and the artificial administration and decision-making concerning revenue from safari operations. For most people it has to do with protecting fields, huts, and resources. It has to do with gathering herbs, foraging for tubers and wild fruits, setting snares, praying to ancestors, practicing witchcraft, and of course obtaining meat; all done largely for the benefit, maintenance, and reproduction of oneself and one's family.

Theory and Practice of Participatory Methods

Despite some of the demonstrated shortfalls of participatory methods to development, conservation, rural extension, and in research, they are gaining in popularity. Goebel (1998) maintains these methods have the potential to meet several positive research goals. Participatory methods such as PRA exercises, create opportunities for researchers to observe some sets of village power relations. Leaders or influential individuals can be identified and gender relations observed. However, Goebel remarks that the public nature of PRA methods and the emphasis on group work also can hide power relations and give a false sense of homogeneity in the group. Marginal or even unpopular views can be suppressed.

Anthropologists have described the increasing importance of the participation of local people in conservation programs both in protected areas and in the management of farmers in plant genetic resources. Concerning policy formation we seem to have excellent input from the practitioners a little input from the theorists but almost no input from the participants (Tuler and Webler 1999). It is now widely accepted that members of the public should be involved in environmental planning and conservation, but the exact nature of their participation is usually ill-defined. This ambiguity has led many researchers to explore and define the principles that distinguish useful participation from irrelevant involvement. The literature included researchers and practitioners intuitively deducing principles based on what they have read and experienced, but there are few attempts to derive principles from the theory (Fiorino 1990, Laird 1993, Webler 1995, Tuler and Webler 1999). Moreover, while participants have been asked to define "successful outcomes" of public participation, there appears to be no published literature

about how participants define, in their own voices "good" process (Tuler and Webler 1999)

National Policy Options

Cameroon has generally been complacent regarding the protection of its biodiversity. Although Cameroon is famous in international conservation circles for its important rainforest, no commercial eco-tourist industry that makes conservation policy highly profitable, as first initiated in countries like Kenya, Zimbabwe, Tanzania, and Botswana, has been developed. To date Cameroon's national policy appears to be conducive to exploiting natural resources when it is markedly more profitable than the negative attention drawn by international remonstration. It is within this context of constraint that support for conservation planning to protect areas like the Korup National Forest is generally formed.

Spot The Forest Through The Bush

From interview data collected in Cameroon between 1992 and 1995, Sharpe (1998) remarks that the 'forest" is itself a contested category: many individuals and groups did not distinguish forest from bush, while others distinguished the bush as an area that was developed (i.e., by conversion to farms or farm fallow) (Sharpe 1998). Informants from remote settlements within the forest were least likely to use the term "forest". In conversation, "Forest" and "bush" as discrete categories are more marked in the built-up villages and towns along the Kumba corridor (See Korup Zone map Appendix E) than around the Korup National Park, where the term 'forest" is little used except in contexts controlled by the Korup Project.

There are cultural factors opposing conservation. Among the urban elite, many see the presence of large numbers of wild animals, and even more the existence of stretches

of "bush" as indicators that their country is "backward," that it has failed to develop all its resources, or, even worse, that it is being regarded as a kind of primitive museum (Cartwright 1991). Entry into the forest, either as the first settler, or more mundanely as a farmer clearing a new plot, is still seen as entering a world of dangers, much as it was among cognate cultures in eastern Nigeria early in the 1900s (Talbot 1912 in Sharpe 1998).

Part Two

Historical Access to Credit in Rural Areas

Private banks avoided lending in rural areas because they viewed the sector as risky and unprofitable. Private banks particularly avoided long term loans with grace periods, which can be an important feature for certain agricultural investments (Yaron, Benjamin and Piprek 1997). Despite this, beginning in the 1950s, the principle aim for development strategies in poor Third World countries emphasized increases in agricultural production, helping the poor, and meeting the basic needs of rural people. Donor agencies and governments attempted various operational programs to try and achieve these basic objectives. It was in this context that rural credit programs were implemented in developing countries.

What became evident was that a vicious cycle of low capital, low productivity, low income, low savings, and consequent low capital seemed to be a chronic dilemma in rural areas. Rural credit was perceived as an innovative instrument that could break this cycle. Traditional financial institutions, such as commercial banks and insurance companies, were generally not suitable to provide credit for these emergent rural areas. Their objectives, organizational structure, system of branch networks, and lending procedures restricted their abilities to adequately serve the rural sectors. Even early rural credit

programs set up by development and donor agencies focused more on commercially oriented producers (Padmanabhan 1989)

By the 1960s, there was a clear shift in the strategies of national governments and donor agencies in favor of financial support structures to small farmer producers Lack of rural credit was perceived as the major limiting factor for small farmers in achieving higher production and productivity It was also thought that the rural credit institutions already in place, provided by informal lenders, were exploitative and expensive for small farmers It was argued that the hold these informal lenders had on rural debtors should be counteracted by extending low-interest institutional credit (Padmanabhan 1989), in other words programs were initiated to discourage informal credit by offering low interest formal credit to discourage borrowers from the higher interest rates It was against this background that aid agencies and national governments funded investment and production costs through commercial banks to extend credit to small rural producers

The expectation was that with the additional physical resources that could be obtained through a loan, combined with surplus labor borrowers could increase their outputs and incomes. Interest rates were set deliberately low lower than that of informal lender rates, and they only covered transaction costs, loan defaults and capital erosion on account of inflation (Padmanabhan 1989) The loan capital originally provided was a revolving permanent fund that would perpetually regenerate the credit cycle

After many evaluations of these initial attempts at rural credit it became apparent by the late 1960s that a major portion of the additional credit never reached the intended beneficiaries. It also became clear that many of the financing institutions could not meet their operational costs from the interest income. Other institutions failed to recover large

amounts of outstanding loans The traditional model used in this initial endeavor proved to be oversimplified and did not stand the test of time (Padmanabhan 1989)

Rural credit programs were available throughout the 1970s however borrower emphasis shifted to informal systems as donors attempted to seek remedies to some of the endemic problems that had become pervasive throughout the formal system (See Figure 2-1) It then became apparent to donor agencies that rural credit and related services were much more complex than initially thought Rather then modeling rural credit initiatives after U S or international lending ideals, devising new and appropriate institutional mechanisms and systems for loan administration co-ordination, and personnel management became the new focus

There was a need to learn more about the most appropriate channels for providing credit at a low cost and how to reach large numbers of rural farmers, to be productive. Principles different from those originally designed to reach relatively few producers were required, and in the case of co-operative institutions, their needs and the needs of the community needed to be properly identified to be most effective Lending procedures then have to vary according to the different societies and cultures among which they would have to conform

Over the past few years rural credit has emerged again as a powerful policy instrument designed to deal with the problems of rural development in the Third World (Padmanabhan 1989) Penny (1968) argues that governments generally see credit as an easy way to increase the flow of capital to the rural sector, but forget that credit does not necessarily represent capital Merely increasing the supply of money does not create

capital nor can capital be used developmentally if farmers are permitted to use their borrowings for consumption (Penny 1968)

At this juncture, the definition of capital is an important consideration. "Capital" is defined as a stock of wealth that can be used for further production, as distinguished from goods which are used for current consumption. For example, in agriculture, capital represents a host of items, e.g., machinery, irrigation systems, farm buildings, well developed land, and the like. The more developed the agricultural system, chances are the more capital is used and created by farmers (Padmanabhan 1989). Padmanabhan (1989) maintains that, by judiciously combining labor with more capital, a farmer's productivity, both per unit of labor and per unit of land, increases. The increased productivity is reflected in the generation of more production and more income (Padmanabhan 1989). Therefore, capital can only be increased through saving a part of what is produced. If a society used up all its production for current consumption, there would be nothing left for making "capital" to increase further consumption (Padmanabhan 1989). It can be stated that credit is neither essential nor sufficient to promote rural development, but financial systems can act as a strong secondary force under certain conditions.

According to Padmanabhan (1989) there are several basic characteristics of rural credit. These include credit as an input, credit as a support mechanism, and credit as a commodity.

Credit as Input, Not as Income

Farmers report a "need for credit," but not a simple need in the same sense as physical inputs such as fertilizers, seeds, pumps, etc. Credit is not an input in the production process, but rather a command over resources, thereby removing any financial constraints, if any, prior to receiving the credit.

This command offers a financial buffer in face of uncertainty. This buffer helps not only in an economic sense, but socially and psychologically. Socially, it bonds others within the community to the borrower's dilemma as a support mechanism. Psychologically, a borrower relies on the community for support, and for action. The borrower is therefore not alone when experiencing a disruption or uncertainty. This type of insurance can lessen the weight of uncertainty and vulnerability.

Furthermore, as money is not worth, credit is not income, although it could lead to income. What is important here is the borrower's "debt capacity," for example, his ability to pay back a given sum after putting it to productive use. This is important to consider because, when borrowers and lenders do not see credit in this way, it can lead to problems for both.

Credit as Fungible

Fungibility implies that different units of a commodity are perfectly interchangeable. Since credit is usually received in the form of money, it has the same properties as money. Standardization enables money to serve as a medium of exchange, making monetized transactions more efficient than barter. However this fungibility, or interchangeable ability of commodities, makes it difficult to evaluate the relative impact of credit programs.

Resources obtained through credit tend to flow toward activities where the borrower has maximum preference. Priorities visualized by the borrower are given maximum precedence over any stipulations of the lending agency, regardless of the type of control the latter exercises over its borrowers. This makes direct intervention by governments in credit markets through administrative fiats often ineffective. For the same reason, financial institutions that meet only the partial credit needs of farmers fail to

make an impact. Informal credit generally has no such obligation or administrative caveat.

Confidence is fundamental to finance. The absence of mutual confidence between borrowers and lenders increases transaction costs. When both lenders and borrowers reap the benefits of participating in the transaction, it reinforces confidence for both parties.

Definition of Poverty

Poverty is most often classified as chronic or transitory (Morduch 1994). Morduch (1994) maintains that the definitions are sample specific in that, if a household is poor in every period of a sample population, then it is chronically poor, otherwise it is transitorily poor. In low-income countries, transitory poverty is often a failure to find protection against stochastic elements in the economic environment. This type of poverty can be distinguished from that of households that suffer an event that reduces their fundamental earning capacity (Morduch 1994). Poverty for these households is similar to that of the chronically poor, who also suffer from a lack of earning capacity (Morduch 1994). Because the event that leads to the entrance to poverty is associated with a drop in permanent income, generally it will not be possible to borrow against future earnings to stay above the poverty line (Morduch 1994).

Rural Financial Institutions for the Poor: "Frontier Finance"

In most developing countries, two factors have contributed to increasing rural poverty and destitution: high population growth rates and neglect of the rural sector. In the rural sector, the main business is agriculture, which supports a large work force. Agriculture also contributes substantially to national income, exports, and domestic food and raw materials supply. Whenever one looks at growth, in terms of popular welfare or industrial growth, the role of agriculture and rural development is significant. No real

development is possible in Third World countries without developing the small farms, which predominate in their agriculture. It is within this context that "credit" can play a significant role by providing the needed liquidity and insurance to farmers who do not have sufficient liquid funds to take a risk, develop an opportunity, or face uncertainty.

Credit can be defined as an opportunity that enables a person to extend his control as distinct from his ownership of resources (Padmanabhan 1989). And through credit financial savings are transformed into capital by restraining its use as a resource during times of uncertainty, as credit will be used in place of savings. However, if credit is extended without clear opportunity [as is very often done in rural credit systems], then it may end up as consumption, instead of capital. At a certain stage in agricultural development, agricultural credit clearly does become a strong force for further improvement (Galbraith 1952, Padmanabhan 1989).

Von Pischke (1991) used the term "frontier finance" to describe these initiatives focusing on rural financial institution (RFI) building. This type of finance may be costly and risky, but it has the potential to stimulate economic growth and realize food security (Schrieder 1996, Thillairajah 1994, World Bank 1984). The accessibility of formal financial services in rural areas depends on the density of financial institutions and the scope of their services (Schrieder 1996). Therefore, the worth, effectiveness, and level of use depends on the conduciveness of the services to the poor and their objectives.

Formal financial intermediation in rural areas of developing countries remains shallow in terms of institutional deepening, customer outreach, and range of services, however much effort has been devoted by governments and international agencies to the task of formal institution building (Schrieder 1986).

Traditional Structure of Credit Institutions

There are several types of credit institutions that can be grouped into three distinct categories – nationwide regionally and locally based. These categories include national development banks specialized agricultural credit institutions, commercial banks, rural banks rural informal and formal cooperatives and government supported project authorities.

While there is no single institutional model suitable for all countries and situations their suitability for success is dependent on several factors the most important being that these institutions need to be able to adapt fast to local conditions and financial flows The following sections will outline several institutional models and conduits for rural credit

Commercial Banks

Commercial banks were the earliest form of a formal agency to provide agricultural credit in most developing countries However they were only interested in financing large farmers, as well as various agricultural supply and marketing agents Later some commercial banks attempted to extend credit to small farmers, partly due to government pressure and new development policy mandates Despite incentives to expand into the rural sectors many of the commercial banks did not take to rural lending with much enthusiasm Their penetration to rural areas, and in particular to small farmer financing services received only a "left handed treatment" (Padmanabhan 1989) This was mainly due to the commercial banks' concerns for increasing profits while reducing risk both of which are difficult to control in rural lending

Developed from a western model in an urban setting, commercial bank explorations into rural ethnically diverse settings experienced difficulties in adapting to local cultural variations financial flows and rural ethos All these factors added to a

tremendously unsuccessful commercial bank experience in rural lending (Padmanabhan 1989, von Pischke 1991, Thillairajah 1994)

Agricultural Development Banks

Despite the difficulties of commercial banks in administering rural credit agricultural development banks were soon developed specifically to address these gaps in understanding. Most of the agricultural development banks have been established only in the past 25 30 years. They deal exclusively with farmers and other rural communities. Many of these types of banks are either directly owned by the state or have substantial state participation. Some were also developed due to the increased availability of external donor food aid funds (Padmanabhan 1989).

A major weakness of this type of banking scheme has been their excessively centralized and bureaucratic style of management. This characteristic has typically made them ill suited to lend to highly dispersed small farmers that typify the rural sector. The excessive centralization in many of these banks has resulted in increased administrative costs and specifically the inability to adapt to local conditions.

Many of these development banks have depended heavily on government assistance and political intervention to keep them solvent. Unable to act as an intermediary lending organization between rural savers and borrowers, these banks mainly serve as a top-down, one-way conduit between the government and the rural sectors (Padmanabhan 1989, von Pischke 1991).

Rural people were not regarded as a profitable market to be developed, but rather as poor, exploited or economically incompetent people requiring assistance (von Pischke 1991). In turn, rural people did not view the specialized farm credit program as

something of their own but rather as a benevolent intrusion to be exploited (Padmanabhan 1989, Yaron et al 1997)

Agricultural development banks were not positioned to understand the financial flaws, behaviors and priorities of the rural sector and consequently did not have their confidence either With their obvious flaws and surreptitious lending policies many simply have failed, draining not only state treasuries but also the pockets of farmers looking for accessible and affordable financial security systems

Cooperatives

Private cooperatives quickly spread out into rural areas Smaller more efficiently run satellite cooperatives, with less administrative costs have pursued the potential of realizing the rural credit promises made by the bulky less competitive banks and to their credit, they are the most accessible formal system of banking available to rural farmers The strength of the smaller cooperative banks is their adaptability and responsiveness to local needs in rural areas They genuinely reflect the local ethos and culture unlike their commercial counterparts.

Organizationally they are usually similar to their central bank with locally linked cooperatives through a district or regional association In some countries, cooperatives are linked to a national agricultural development bank or a central bank (Padmanabhan 1989) In addition to credit, cooperatives have several other functions, such as a supply of input marketing of output and managing storage or processing facilities (Padmanabhan 1989 Herdhues and Weinschenck 1989 Schneider 1986)

Despite their potential advantages, building effective cooperatives for credit distribution has been difficult in many developing nations (Padmanabhan 1989) The main drawbacks faced by cooperatives have traditionally been the scarcity of trained

personnel and managerial leadership (Ndikum 1999 Padmanabhan 1989) Other deterents to success include an absence of experienced management, lack of supporting infrastructure and extension training, insufficient supervision and auditing of cooperatives absence of professional regulatory accountability poor member participation and too much political disturbance or regulatory interference (Ndikum 1999 Padmanabhan 1989)

Another potential pitfall for cooperatives is the interdependencies of the various components One component s failure may affect the entire cooperative For example in cases where marketing and credit were combined, failures in marketing led to failures in credit delivery due to an increase in loan defaults (Padmanabhan 1989) In Cameroon, cooperatives were partially successful in their credit operations however there were failures in marketing inputs supply and extension To remedy this, concentration on single rather than various activities is often recommended (Padmanabhan 1989)

Project Authorities / NGOs

Another system of credit transfer used in developing nations is a project authority or non government association (NGO) Many of these organizations have simply added credit distribution as a secondary function to their primary project objectives. These have been tried mostly in countries that have not established well-developed rural banking systems, and they have worked successfully in channeling significant credit to large numbers of rural borrowers, mainly in Africa (Padmanabhan 1989)

Part of their success has been that they could provide a guaranteed market for the crops of small farmers and thus link credit with marketing They could also take delivery in kind and offer supporting services to borrowers However some of them have high operating costs as compared with other banks, and their experience in loan recovery is

mixed (Padmanabhan 1989) Many rural borrowers confuse this type of credit conduit with a grant or donation with low repayment priorities

Local Lending Institutions

Despite the weak financial institutions prevalent in most low-income countries, households employ and maintain a variety of secondary arrangements that can smooth consumption during rough times Prominent among these are traditional Local Lending Institutions (LLIs) or Rural Financial Systems (RFS) These are characterized by borrowing from neighbors and relatives and selling durable assets Informal savings and credit groups also play an important role in rural finance These are characterized by informal rotating or revolving credit schemes These will be discussed in detail in chapter eight where local credit systems are further outlined

A typical rural finance system is extremely complex involving a variety of institutions, informal groups and private individuals Some of these institutions are only incidentally involved in rural finance but nevertheless play an important role (Heidhues and Weinschenck 1989) Figure one illustrates the complexity of rural finance systems

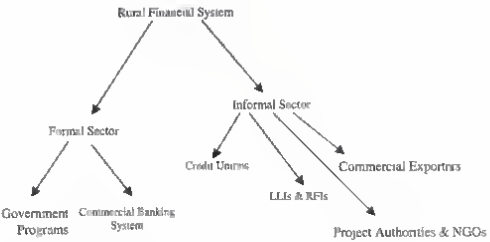

Figure 1 Rural Financial Systems

Importance of Rural Credit Discussed by Other Authors in Specific Countries

Gambia

Many authors suggest the importance of rural money lending and strategies of safeguarding rural assets. Research by Parker Shipton (1987, 1989, 1992) explores the variety of strategies Gambians use to safeguard their wealth from their family or spouses. Shipton explains that, when it comes to cash, there is less free sharing of wealth in Gambian marriages than in some countries outside of Africa. Here Shipton introduces the concept of the "Rope and the Box," two strategies for personal savings known as *Julan* or "rope" practiced by *kafo* groups, or "age societies," and saving cash in a box.

Gambian personal savings styles have evolved to the tactical level where devices are used to safeguard savings at any cost. Analogous to western styled piggy banks, rural Gambians who can afford them keep locked boxes within their houses, partly to safeguard their valuables from their spouses. Many Gambians hire carpenters to build

actual small wooden savings boxes with slots that even they cannot open themselves without breaking

Shipton s research contrasts the complexity of anxieties in connection with having available cash, to the common strategies of Gambians who have to defend their money from themselves by handing it over to an independent money-keeper who is expected to return the cash, interest free, upon demand.

Cameroon

Schrieder and Cuevas (1992) Delancy (1977) Seibell (1986) and Miracle, Miracle and Cohen (1980) have also looked at savings mobilization, financial self-help groups (SHG's) and Rotating Savings and Credit Associations (ROSCAs) in Cameroon's Northwest, West and Central Provinces They have described and analyzed the main features, operational modes and relative importance of these in the country's monetized economy They have also emphasized the importance of informal groups in Cameroon, and their influential role in that country's monetary system.

Niger

In contrast Graham (1997, 1992) has contributed to the policy debate that supports creating various types of broader based viable rural financial intermediaries Graham examined the role of informal finance in rural Niger and the lessons of these informal arrangements for building formal credit institutions He maintains that in Africa the informal sector plays an overwhelming role in supplying financial services to rural people yet research on this topic is limited and policymakers tend to ignore it or minimize its importance (Graham 1992)

Risk, Insurance, and Rural Credit

One of the primary motivations for borrowing in agricultural societies is to stabilize consumption in the face of fluctuating incomes. Udry's (1994) research with rural Nigerians demonstrates that households tend to borrow more when they suffer an adverse shock, and lend more when they are favored with a positive shock (e.g., special occasions, weddings, baptisms, good harvests etc.,). Udry argues that in rural Nigeria credit transactions play a direct role in pooling risk among households. Repayments on loans depend on the realizations of random production and consumptions shocks by both the borrower and the lender (Udry 1994). This supports Murdoch's (1994) observations that, in countries with weak financial institutions, households employ a variety of secondary arrangements which provide insurance. Prominent among them are borrowing from neighbors and relatives.

Udry further maintains that the restriction of loan transactions to agents within a small space allows for the free flow of information between borrower and lender. This is necessary to support state-contingent contracting and it provides access to community based mechanisms to monitor and enforce lending contracts. This supports Padmanabhan's (1989) observations of a mutual need for confidence between borrower and lender for successful credit transfers to exist. This type of confidence does not typically exist in a state rural-credit transfer system. This mutual insurance arrangement is a very important component for dealing with adverse or positive shocks (unanticipated cash expenditures, special events, fees, calamities etc.,).

Coping with risk can be very costly to rural households in low-income countries, especially where risk mitigation is limited to two options- production and employment decisions. Morduch (1995) maintains that coping with risk can occur on two levels. First,

households can smooth income. This is most often achieved by making conservative production or employment choices and diversifying economic activities. In this way households can take steps to protect themselves from adverse income shocks before they ever occur.

Second, Morduch (1995) maintains that households can smooth consumption by borrowing and saving, depleting and accumulating non financial assets, adjusting labor supply, and employing formal and informal insurance arrangements. These mechanisms take place after shocks occur and help to insulate consumption patterns from income variability (Morduch 1995). Morduch (1995) further stresses that one cannot simply look at the smoothness of consumption and know which type of smoothing mechanism is at work, as one may substitute for the other.

But what diversified economic activities and employment choices are available to rural households? And what are the conditions for which rural households have access to borrowing, saving or any other insurance activity? Given the high potential demand for insurance and credit, how vulnerable do households remain in developing countries with limited access to rural credit? By assessing all the various coping strategies available to rural households, it then becomes important to determine how these mechanisms allow rural households to smooth consumption in ways predicted by fully functioning markets for credit and insurance.

Access to Credit: Financial and Environmental Insurance

The concern so far has been with the impact of adverse or positive shock on income patterns. Not much in the literature has been detailed about the possible environmental impacts of the traditional smoothing mechanisms used in the mitigation of shock

employed by vulnerable groups These smoothing mechanisms may have implications towards the insurance value of biodiversity and its protection

Typically antipoverty programs target mitigation strategies on price stabilization and financial development (Morduch 1994) And biodiversity protection programs target strategies of community natural resource management (Kellert et al 2000 Schroeder 1999), land restrictions or resettlement (Schroeder 1999) or co-management (Hasler 1996) as in the case with CAMPFIRE. It has been suggested that strengthening employment-guarantee schemes can help reduce poverty, both through providing wages directly and through providing an extra insurance function that enables households to take risks that can then raise incomes (Walker and Ryan 1990 in Morduch 1994) Conversely a lack of insurance usually exacerbates the poverty problem (Morduch 1994)

Morduch (1994) highlights two matters to consider First, are more households expected to escape poverty due to good shocks or pushed into poverty due to bad shocks? Second, what are the costs associated with the mechanisms involved in smoothing consumption or income fluctuations? The two aims of this research are to first emphasize the importance of providing a mechanism for smoothing consumption during rough times, and to discover what the implications are of effective formal credit transfers programs when they are made available to rural households

The second aim of this research is to determine the availability of the various types of rural credit and highlight their effectiveness This is important because a lack of availability may influence several variables, e g., a) the insurance value of the forest

and/or its biodiversity; b) vulnerability of rural households; c) production and consumption strategies; d) and perceived health and welfare.

A lack of insight into these variables may have significant implications for conservation policy that has focused almost exclusively on a combination of direct interventions designed to restrict forest access but at the same time attempt to raise farmer incomes. This research may also have significant implications in targeting specific sectors of indigenous institutional support.

By determining the dynamics involved in adverse and positive shocks, income fluctuations, consumption and shock absorption mechanisms, a proper plan can be laid out to offer alternatives directly to rural households. This will have an effect to strengthening indigenous mechanisms used by farmers in mitigating stress or smoothing consumption in environments where conservation is part of a national policy.

Effects of International Conservation Mandates

Often policymakers or corporate strategists for development become prime actors in creating mandates for international collaborations for conservation. When are these international mandates for collaboration in conservation strategies successful? Can policymakers or other actors in international relations facilitate cooperation? Bernauer (1995) stresses that these are questions that are fundamental to understanding the successes and failures of international institutional collaboration. This raises two further issues. First, under what conditions can international institutions establish some form of cooperation with national institutions or groups? Second, can international institutions contribute to successful international collaboration, in some specific meaning of success, and, if so, under what conditions? The second question is even more important because it draws our attention to the form and quality of cooperation and to the possibilities of

achieving cooperative success in the absence of national governance structures as is the case in most of rural Africa

Analysts have focused on whether the existence or operation of institutions has an effect on particular outcomes rather than on specific institutional features that may account for institutional effect Bernauer (1995) points out that institutions may influence outcomes by shaping behavior in a variety of ways Highlighted are transparency procedures collective choice mechanisms transformation rules and the importance of monitoring (Bernauer 1995) Wettestad (1994) stresses the importance of a participatory scope and access to institutional decision making rules the role of secretariats the scope of institutional agendas the organization of scientific or technical input and verification and compliance mechanisms However, Bernauer (1995) maintains that most of these propositions are not embedded in a coherent theoretical argument rather they are *ad hoc* hypotheses derived from intuition inductive studies a large spectrum of social science theories and practical knowledge on the conduct of international environmental politics Further these propositions have not been tested and compared in terms of their relative explanatory weight (Bernauer 1995)

This means that the extent to which these propositions are relevant to environmental institutions at the international level is largely an open question And some of these suggestions might even be irrelevant For example Keohane (1987) and Hass, et al , (1987) claim that sanctions play only a minor role in affecting the behavior of actors in international environmental politics and the proposition of any autonomy of local institutions from higher authorities is rarely applicable in international affairs

Barnaner (1995) explains that we have made substantial progress in understanding the conditions under which we are able to establish international institutions to protect the environment, but less successful in explaining the performance of these institutions once they have been established. Many analysts of international politics believe that the existence or operation of international institutions, plus good institutional design in particular can contribute to the progress of environmental protection programs Conversely, others also contend that as long as there is no environmental leviathan, the distribution of power and the interests of key actors account for the collective outcomes of international environmental relations (Bernauer1995)

Contribution of Anthropology

Orlove and Brush (1996) point to two distinctive features of anthropology that make it particularly well suited for studying protected areas and helping to create effective policy for environmental and cultural protection First, anthropologists have a commitment to long-term field studies in relatively isolated regions where most protected areas are found or established Second, anthropologists are willing to study local populations reserve managers international conservationists, biologists, government officials, and the staff of NGOs Moreover, environmentalism itself has become an object of study for anthropologists interested in discourse, ideology, and postmodernism In both academic and advocacy roles, anthropologists have argued for the participation of local populations in the planning and management of protected areas

Participatory Relationships

But is participation enough? Participation implies participatory relationships between beneficiaries and anthropologists or development planners or conservation managers. It would be naïve to assume that any negotiation processes or investigation

takes place on n level playing field The very iden of participatory negotiations conjures np images of parties eqnally able to voice their positions and argue for them which is very far from the realities of any participatory scheme that theoretically seeks to promote conservation Yes anthropologists have a role in developing international mandates for conservation and participatory methodologies bnt they also have to be mindful that different actors have very different capacities to voice and stake their claims And no matter whnt the heuristic intention of the agency seeking to aid in conservation or development, it can be argued that, if a powerful group does not achieve its desired outcome through open negotiation they are likely to do so through other means

This is not to say that participatory negotiations have no value in setting policy Bnt that there are certain idealized contexts where representations of communities successfully managing their environments at eqnilibrinm supported by social harmony equality and tradition can have great strategic value (Leach, et al 1999, Li 1996) Anthropologists are able to nse them in making a case against other more dominant narratives for example to counter inappropriate emphasis on state or parastatal control over all resources or misplaced neo liberal agendas stressing privatization and market liberalization (Leach et al 1999) Anthropology has the obligation to provide alternative approaches, and such images have a role in opening np apace for policy shifts and new program directions for effective international mnndates

Links to Comparative Study

It is within the context of these discussions about credit conservation and strategies against misfortune that this study was introduced This study attempts to link three very important components of rural people s attempts at maintaining a sustainable livelihood in the face of vulnerability while living in ecologically diverse and fragile environments

It is often said that poor rural households in developing nations remain inadequately insured against shocks (Wong and Godoy 2002). Many researchers have also said that rural people increase their dependence on the forest when they face unanticipated misfortunes (Gunatilake et al. 1993, Hecht et al 1988, Scoones et al. Falconer 1992).

In looking for ways to alleviate vulnerability, researchers have studied how the adoption of new farm technologies may raise the income of rural farmers (Godoy et al., 1997, Ruttan 1977, Barham et al 1995), produce equitable benefits to society. (Lipton and Longhurst 1989), and may lower pressure on renewable natural resources (Bedoya 1995, Moran 1993, Hecht 1993, Southgate 1991). Since the early 1970s, researchers have been also studying the causes of neotropical deforestation (Gómez-Pompa et al., 1972, Godoy et al. 1998).

Policy makers often assume that tropical forests have no economic value unless they are strategically logged, cleared and then farmed (Godoy and Lubowski 1992, Hecht, Anderson, and May 1988). It is within this current that researchers have tested the affects of income on the clearance of primary rain forest. Godoy et al., (1997) posit that the expansion of markets into isolated villages changes incentive strategies, which induces households to clear forests to plant annual crops (Labeap and Alston 1992 in Godoy 1997), to amass rents, assets, and status symbols (Hecht 1993, Schmink and Wood 1987, Partridge 1984), to meet a demand for more industrialized goods, and to invest in economic activities with a fast payoff (Sahneider 1993, Foweraker 1981).

With escalated incomes and increased ties to tight markets, deforestation drops after households reach a greater threshold of income (Godoy et al., 1997). In richer

households and villages tightly linked to markets deforestation drops because incentives change. Rules of land tenure become clearer (Roosevelt 1990), causing a rise in investments to improve yields from crops and from livestock (Browder 1994 in Godoy 1997; Anderson and Hill 1990). People therefore have greater opportunities to work outside the farm and so depend less on the forest (Painter 1995).

It is within this framework that links between Dr. Ricardo Godoy's larger multinational comparative study and this study are established. Dr. Godoy, the principal investigator for this study looked at how the forest was used as a safety net among the Tsimane Indians of Bolivia. He used similar methods to collect information from several indigenous societies of lowland Latin America, the Tawahka of Hondonras, and the Mojeño, Yuracaré, and Chiquitano of Bolivia.

This deserves closer empirical scrutiny for at least three reasons. First, most case studies of people's reliance on the forest in times of need have been qualitative (Ogle 1996) and assert that households that suffer from misfortune may need to increase their dependence on the forest only if they lack cheaper forms of self-insurance (Godoy and Jacobson 1998). Once researchers control for reciprocity, credit, or for remittances from urban kin, they may find that misfortunes do not drive dependence on the forest (Godoy and Jacobson 1998).

Second, though crop losses may increase rural villagers' reliance on non-liquid forest assets[11], other types of misfortune may not (e.g., deaths, illness etc.). For instance, a household that loses a large share of its subsistence crop and whose members, as a

[11] Liquid forest assets include game, tubers, seeds, fruits, construction materials, and medicines. Non-liquid assets are described as the nutrients locked in the soil and phytomass.

consequence, become undernourished or ill may be unable to increase its use of both types of forest assets because of lowered work activity (Godoy and Jacobson 1998) Conversely, a death or calamity may encourage more foraging to cover the nonanticipated demand or costs for resources but may not be an incentive to clear more forest

Third, Godoy et al (1998) say that households typically use a bundle of insurance mechanisms to cope with calamities of which forest dependence is only one The bundle itself will change as households tighten their links to the market The importance of the forest may then decline as the village economy modernizes In remote settlements one might expect households to rely on reciprocity and the forest to weather bad times, but, in settlements with closer ties to the market one might expect to find wage labor, credit and the use of savings to predominate (Godoy and Jacobson 1998)

Theoretical Discussion of the Household

Defining the Household

Throughout this research the definition of a household hinged on an intuitive understanding of what a household actually is. This was intentional, since the definition of the household is an intractable theoretical problem (Messer 1983) Given the diverse and complex nature of human society, a universal definition of the household cannot completely fit all conditions One can recognize a variety of functions usually associated with a household co-residence joint production shared consumption, kinship links (Bender 1967) but these functions often define different sets of individuals (Heywood in Lorge and Rogers 1990) In this study as in many other area studies the unit of joint production consists of a different set of individuals from the food consumption unit (e.g. Longhurst 1980 [Nigeria], Gnyer 1981 [Cameroon], Krieger 1994 [Cameroon]) The definition of co-residence itself may not be completely clear where many dwelling units

form a single compound (Gurney and Omolalu 1971) Migration of household members also creates ambiguities in devising a universal definition of household A person may leave the household for most of the year only to return to contribute labor during certain seasons, or to contribute remittances for the support of the resident household members and yet still share in the origins and production of the household

Given these considerations, conceptualizing an adequate definition of "household" presents problems for both qualitative and quantitative social scientists, particularly in defining its connection with family and in dealing with kinship ties that extend beyond its boundaries (Castle 1993 Wilk and Netting 1984) According to Castle (1993), using the term "household" as a synonym for the more standard term, "domestic group" violates in a sense the anthropological canon that differentiates between families and households A family refers to a kin based, genealogically defined, hence, potentially open, group a household is a closed localized group of people who live together and share the same kinds of resources and/or activities.

A household, with its connotations of co-residence special enclosure and common property is an Anglo-Saxon concept and many languages do not sharply differentiate households and families (O Laughlin 1999). Although the household/family distinction is conceptually clear in reality it is often fuzzy O'Laughlin's (1999) review of the current literature explains that the boundaries of kinship are culturally defined so no family is in fact an open biologically defined group Since living together and sharing resources are important components of this social and cultural bonding of kinship and since people living together and sharing resources are often genealogically related, the distinction between family and household does not necessarily hold Yanagisako's (1979) version of

an extreme constructivist position where both the roles of men and women in sexual reproduction lie at the core of the cultural organization of gender even as it constitutes the genealogical grid at the core of kinship studies (Yanagisako and Collier 1987) Thus, there exists neither a biological core nor the necessary biological markers through which we can define the "domestic domain" (O Laughlin 1999) Another meaning to consider is the functionalist definition of reproductive or domestic activities that are assumed to cluster in a single group labeled the "household " Many household studies assume that such a cluster exists and label this the "domestic domain" (O'Laughlin 1999)

Demographers using survey census data usually focus on household definitions centered on common provisions of food, for example from a common granary or use of a common hearth, or cooking pot. Or they count all the members of the household who look to the same person as their household head (UN 1980)

O'Laughlin (1999) further explains that feminist criticism of household studies has exposed three interrelated premises underlying the definition of households.

- There is a domestic domain within which relatively enduring groups are defined by activities concerned with everyday biological reproduction – residing together preparing and eating food, sleeping having sex, having children and caring for dependents
- Thus private and intimate domestic domain is sharply divided from the public political domain
- Within the domestic domain there is a strong degree of interdependence, pooling of resources and commonality of interest that we can ascribe agency to the groups formed there

O'Laughlin 1999

Throughout the available research there is little information about the social relationships of those defined as belonging to the same household, nor is there much

information about the external networks of individuals on whom they may rely or by contrast, whom they may support (Castle 1993)

Anthropologists on the other hand prefer the term "domestic domain" that relates not only to the preparation of food, but also to the socialization of children and transfer of property and to the maintenance and reproduction of household values and influence (Bender 1967, Goody 1976, Castle 1993). Importantly these include functional features of a household organization and processes of future household developments associated with households splitting up or enlarging. Guyer and Peters (1987) observed that, particularly in rural Africa consumption and production groups are often not the same, and the boundaries of domestic groups are constantly shifting. Therefore they do not fit into neat hierarchical structures (Guyer and Peters 1987, O'Laughlin 1999). Guyer and Peters note that there is a tendency to focus on economic issues alone in functional definitions of a domestic domain. Guyer's (1980) definition acknowledges the fluid nature of the boundaries separating the household from the community of which it is a part. In her own words, "a household is a particularly dense center in a network of exchange relationships".

Thorner and Ramalwe (1992) describe the difficulty in determining the composition of household groups in Bombay, India. The standard census definition as a group of persons sleeping under the same roof and eating from a common kitchen was not sufficiently flexible. There were households where many people ate together on a regular basis, but did not sleep under the same roof. Working-class women ran boarding houses for men living without their families in the city. More affluent families. Muslim

households in Niger believe it is their obligation to offer tzdaka, an unconditional charity, in their homes, in the form of regular meals to their less affluent neighbors

In Taiwan the census defines a nuclear family as part of an extended family household if it receives more then 50 percent of its income from the extended family According to Greenhalgh, (1982) this tends to understate the disparities in household income, since the poorest nuclear families combine their incomes with the larger unit (Greenhalgh in Lorge Rogers 1990)

Bruce and Lloyd (1992) describe the need for a new research focus that transcends the physical and temporal boundaries of the household and stress that 'in the long run, family links rather than living arrangements may be the more important determinants of women s and children s welfare and of the visibility of a 'household '' (Bruce and Lloyd 1992). Similarly Scrimshaw (1989) describes household boundaries as "semi-permeable membranes" through which information and resources flow Rather than assuming, as in standard neo-classical economic theory that all household members have the common objective of pooling resources and maximizing collective benefits rather than personal gain (Becker 1976), we can better conceptualize variations in the means and motives of individuals by theories of bargaining or "co-operative conflict" (Sen 1985 1990)

The household therefore can be viewed as a system within which individuals have different roles of production and consumption, as well as socioeconomic resources but also of information and knowledge for health (Castle 1993) Within this framework household function becomes an organizing factor Wallman (1986) describes how within the household system, "resource keepers" tend to take over the management of household material resources such as food, or cash and control non material resources such as time,

information, and identity Access to and control over these non material resources have to do with household organization as well as structure and govern the relative autonomy and obligation of individual household members.

Difficulties in defining a household will be a continuing factor for researchers Any fixed definition can create subjectivity and possibly misleading distinctions Rather than form an arbitrary definition of a household that may have more exceptions than rules Haywood (1983) suggests defining the household unit according to the particular dimension of interest, whether it is the sharing of production responsibilities common uses of income coresidence or the common cooking pot Adopting a definition of the household that is inappropriate to the culture under study may result in erroneous conclusions about household processes (Lorge Rogers 1990)

For the purposes of this study, a household is considered to be a location where all people living under one or several roofs within a common or adjacent compound share the same resources, and production responsibilities, and work towards the welfare and survival of their collective condition Households for this study were chosen at random, and with the consent of the local village chief Thirty households from each village were selected, yielding an initial total of 180 households for the survey Four participants within each household were then chosen at random for the study

CHAPTER 3
METHODOLOGY

Introduction

This chapter presents the initial design instrument created in the United States prior to departing for Cameroon. There then is a discussion regarding changes to the original design instrument and the reasons for these changes once onsite. This is followed by a detailed plan of the final design and how it was implemented. Some of the constraints that occurred during the study are discussed as well.

Overview of Components

The original methodology for this study was developed in the United States as part of a larger cooperative multinational study that incorporated specific standardized elements. Outlined in this section is the initial succession of research instruments as they were originally designed. After an initial introductory period at the Korup field site, it became apparent that certain elements of the methodology needed to be altered. These modifications will be described in detail in the logistics section of this chapter.

However, due to this study being a component of two larger bodies of research (Smithsonian CTFS and Dr. Ricardo Godoy, Sustainable International Development Program, Brandeis University), I was reluctant to restructure the premise of the hypothesis, or change the focus of the methodology. To learn more about informal credit I expanded the range and extent of the empirical analysis to include more about informal credit systems. And despite the rigidity of the survey instrument, I attempted to incorporate contextual and observational detail in describing the integral importance of

the informal mechaeisms that the original survey instrument may have been too rigid to distinguish or detect.

The sample included 624 randomly chosen respondents from 156 households in six villages. Researchers collected information during thirteen consecutive months over the course of oee calendar year. The informatioe from the first moeth is excluded because that period was used to test methods ued to enhance the reliability of coding among researchers. We defined household as a group of people who cook and eat from the same hearth (a more detailed discussioe of household is foeed in chapter two).

Wealth

To estimate wealth, we conducted an inventory of selected assets owned by the household and [or] individuals living in the household, including farm goods, such as tree crops, seeds, tools, domesticated animals, and durable goods. We converted their relative value to cash based on current market prices.

Scans and Spot Observations

Scans and spot observations methodologies are very useful in observing time allocation amoeg foragers and horticulturalists. This method consists of observing people over several weeks, months, or years, during blocks of time chosen at random. Over time these scans can produce reliable frequency distributions for most of the common types of behavior, bet they do eot yield information on the intensity of the behavior.

During these scans, from the first momeet of coetact, researchers wrote down everything the sebject did. Scans were randomly conducted during the course of the moeth. On those days, a three-hour block of time was reserved to observe the subject. Subjects too ill to leave their homes were also spotted. This is a reliable indicator of illness inteese enoegh to keep an informant bedridden, but it does not distinguish the

difference between a mild illness and a severe illness Also some informants routinely indicated they were ill and on occasion stayed home to conduct other less strenuous activity This was coded differently than severe illness

Weight Days and Consumption

Cultural anthropologists use weight days to measure consumption in non literate simple rural economies to avoid errors from faulty recall that typically arise when solely using surveys (Bernard, et al 1984) A weigh day is a measure of the value of all goods that enter a household during the course of a day This means identifying weighing measuring, and valuing all goods entering the household from dawn until dusk. These goods were valued unprocessed and in the condition they were used at the time of their arrival Some goods were later altered for retail sale during the course of the day Their original value remained intact.

Some goods, mainly non timber forest products, had no value (e.g., consumption fuel wood, indigenous medicines spices and certain uncultivated foodstuffs such as bush mango or bush onions) These products were used in the household Rarely were they sold or bought Therefore these goods were given a value relative to their approximate worth to another product with a definite value, (e g., soap oil, or salt) In this way we obtained consensus on the value based on what a village would be willing to pay

Income Surveys

Each month villagers were asked about all sources of income earned prior to the interview Sources of income were limited to the prior month to enhance the accuracy of data recall This was a continuous variable in the survey instruments and subjects were allowed to specify whether the cash came from work, remittances sales products, labor

or surreptitiously Loans repaid dividends fees or loans taken also were surveyed as another continuous value in the survey instrument

Demographics

During the initial 2 3 months at the field site informants within each household were asked their age and maximum education and their parent s education Literacy language skills, and basic arithmetic abilities were also tested

All this information was aggregated for statistical analysis In the next section, the survey instrument will be described by the stages of its administration

Stages of Methodology

Stage One -Training and Participant Observation Stage Model

Originally this research project was to take place in four linked successive stages as outlined in figure two Each stage contained a research instrument that would take place during a fixed period of time This process would occur over a period of 16 months between November 1998 and March 2000

The first stage (between November 1998 and January 1999) was to include training and initial observation While this was a period of exploratory informal observation, it was also a period af adjustment and discovery During this time I would establish residence in Cameroon and travel to potential research sites introducing the research design to other students colleagues, researchers and government functionaries During this initial period, I anticipated a lot af travelling to rural villages in the buffer zone of the Korup National Park At this time I would also examine the local culture and attempt to acquire basic regional languages skills I would act as an observer gaining a qualitative and ethnographic understanding of the variety of households in the two types of villages

that would be eventually be examined in depth – villages with access to formal credit institutions and villages without access to formal credit institutions

Using various methods of observation, I would have an opportunity to examine how households cope with shocks, and determine the role of the forest credit migration, remittances reciprocity theft, and savings in smoothing fluctuations in income and consumption To a lesser degree, I would also use this time to gain a qualitative understanding of the effects of shocks on health and nutrition Six potential village research sites would be chosen and the project would be introduced to the potential informants, rural villagers

As part of the research design, Dr Paul Nkwi of the University of Yaoundé in Yaoundé Cameroon, had agreed to include two of his graduate students in a collaborative research effort This was discussed with Dr Nkwi prior to my departure to Cameroon. Our initial plan was to include two upper level students as part of a collaborative effort between the University of Florida and the University of Yaoundé The objective was to share resources as well as the research design with Cameroonian students interested in socioeconomic household analysis Toward the end of the first stage I would travel to Yaoundé and interview potential candidates

Stage Two – Demographic and Socioeconomic Survey and Training Stage

This second stage of the research design (between January 1999 and March 1999) included the initial training period and the administration of the demographic and socioeconomic survey

During this stage, I anticipated conducting a baseline socioeconomic and demographic pilot survey of rural households in both types of villages This survey would be composed of approximately 115 questions given in a village module, followed by

household and individual modules of approximately 241 more questions Initially this survey was to be conducted prior to choosing potential student collaborators This would allow me to refine the hypotheses and modify the questionnaire before it was administered in its final form as a panel survey

At this time the principal investigator Ricardo Godoy, would conduct a two-week site visit to Yaoundé where we would then select the two Cameroonian students Following this selection process, Godoy and I would conduct a formal seminar for the students and other researchers, regarding the analysis of household data. This seminar was to take place at one of the potential field sites Rehearsing interview techniques to ensure inter-observer reliability would be an important feature of this seminar Having researchers conduct interviews with subjects and then comparing the responses with one another would help to ensure consistency in obtaining meaningful answers

Stage Three – Panel Survey

The third stage of the research (between January 1999 and March 2000) included the construction of the actual panel survey in its final form. Working as a team we would interview and choose potential informants for the panel survey Households and individual informants would be chosen randomly within each village We anticipated choosing 30 households per village and four informants per household. Once households and informants were chosen they would be individually coded for anonymity The household survey would be composed of approximately 241 questions given in three modules household Individual and plot module It was to be given to these same households and individuals every month We anticipated collecting quantitative data on

- the different types of shocks and other socioeconomic explanatory variables for forest dependence (e g wealth, income, human capital)

- the use of the different forest products, hunting and NTFPs, and the extent of forest clearance, for crop or cash

Stage Four – Panel and Cross-Sectional Survey

The fourth stage of the research (January 2000 and March 2000) incorporated the continuation of the panel survey as described in the third stage, and an attempt to broaden the design into additional villages and households.

During this stage we would extend the original panel survey to include a larger cross section of people, households, and villages in Cameroon. The villages picked for this household survey would be in the Korup National Park and other potential regions in relative proximity to a forest. I anticipated shortening the original panel survey questionnaire to make it expeditious for a broader cross-sectional survey. The total additions to the design would be determined at that time.

Logistics

As previously stated, after the initial introductory period in Cameroon it became clear that certain elements of the research design needed to be altered. This was mainly due to unanticipated obstacles and difficulties experienced once I arrived. The following section details the succession of events after arriving in Cameroon.

Arrival in Cameroon

Upon arriving in Cameroon in November 1998 an indigenous non-governmental organization, Bioresources Development and Conservation Program (BDCP/Cameroon), assumed responsibility as the logistical research affiliate for this project. This affiliation was the result of an ongoing five-year association between BDCP/C and the Smithsonian's Center for Tropical Forest Science (CTFS). BDCP/Cameroon helped to obtain authorization for this project from government agencies and other non-government

agencies (NGO's) already operating within the research area as part of their agreement with their main funding group, ICBG/STRI/CTFS

These NGO s included the World Wildlife Fund for the Protection of Nature/Korup (WWF/Korup), the World Wildlife Fund for the Protection of Nature/Yaoundé, Bioresources and Conservation Program/Cameroon (BDCP/C), the Government of Cameroon (GOC) and the Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ) After official consent was obtained from all the necessary public and private agencies I solicited consent from the various regional rural chiefs residing within the park and the park support zone I did this by arranging invitations and informal introductions to each of the chiefs when the opportunity arose.

As part of the agreement to work in the Korup National Park, officials of the Government of Cameroon were made aware of all aspects of the research methodology and survey design while working under the umbrella of the Korup National Park Project.

Dr Paul Nkwi of the Department of Anthropology at the University of Yaoundé was contacted to initiate the research collaboration with two of his graduate students Working as a team, Ricardo Godoy and I had proposed to train these students in qualitative and quantitative methods of data collection while doing research for CTFS This was to be a collaborative effort using multi-disciplinary techniques as an element of the research design Once these students were trained in both qualitative and quantitative research techniques we would begin the study using various formal and informal methodologies in the targeted research villages

Three types of surveys were actually used; a demographic and socioeconomic survey a panel survey and a cross-sectional survey Research took place in four logical linked, and sequential stages as outlined in figure two

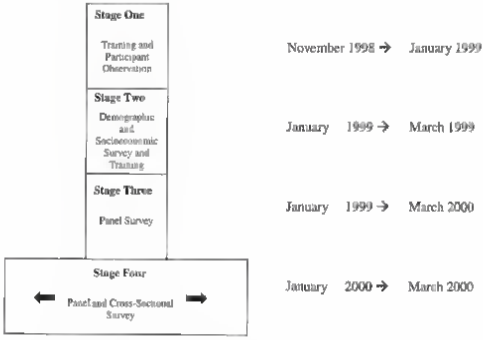

Figure 2 Instruments Dates and Stages of Research

Stages of Research

Stage One (November 1998 to January 1999) Training and Observation

During this period, I established a residence and attempted to develop relationships with the Cameroonian military stationed in the area, the U S Embassy World Wildlife Fund project staff and regional chiefs I also conducted informal surveys in rural villages within the buffer zone of the Korup National Park This was effectively a period of mutual discovery, where I focused on becoming familiar with the local culture customs and the various languages

The people of this area spoke several languages and regional dialects primarily Pidgin and variations of Oroko and Dorup Several residents also spoke Hausa and Songhay two languages normally spoken further north and in areas along the Niger River This was due to the migrations of several families south from Nigeria in an effort to secure improved hunting.

During this time I accompanied Korup project staff on tours of several villages in the region My part was mainly that of an observer gaining a qualitative and ethnographic awareness of the diverse villages and households prior to initiating the formal survey Much of this time was spent in meetings with village elders and rural government officials discussing the Korup project and its impact on local and regional affairs It soon became obvious that I would have to disassociate myself and the research from the Korup National Park administration and their management plan The management plan clearly had an agenda that was viewed with some local hostility I believed any perceived affiliation between my research and the research administered by the Korup Project might compromise my data. I made this distinction clear to all potential informants. During this phase approximately twenty villages were considered for the study

Within each of the initial villages I focused on examining the types of disruptions many typical households experienced I tried to discern qualitatively, how rural households cope with the various types of shocks they may experience Using various methods of observation the range of disruptions and management methods of typical households were examined. Other observations included understanding the role of the forest to the typical household the availability and uses of rural credit, trends in

migration the economic importance of remittances and reciprocity occurrences of theft, and how savings may be used in smoothing fluctuations in income and consumption To a lesser degree I attempted to gain a qualitative understanding of the widespread effects of household shocks on health and nutrition

Also at this time I had the opportunity to introduce the research project to prospective villages and explain in advance, the goals of the second stage of the project.

Stage Two (January 1999 to March 1999) Demographic and Socioeconomic Initial Survey and Training

During the second stage, the research team, composed of the Cameroonian students and myself, carried out a baseline socioeconomic and demographic pilot survey of rural households within six of the villages that were first considered. These six villages represented an excellent example of the regional variations in the Korup National Park, and were identified as villages that met the original criteria of the research design, villages that had access to formal credit institutions and villages that did not have access to formal credit institutions

Since the questionnaire used for this research was originally written in the United States changes and refinements to the survey instrument had to be made. The questionnaire was circulated to other researchers and administrators working for the Korup Project for suggestions on its applicability to the region and then these suggestions were incorporated into the survey

The final questionnaire was then reviewed with the Korup National Park staff the staff of the World Wildlife Fund the GTZ and representatives of the government of Cameroon These refinements mainly restructuring or the elimination of specific

questions were completed before the survey was administered in its final form as a panel survey

At this stage the principal investigator Dr Ricardo Godoy of Brandeis University had planned to visit the project site to review the methodology and train the Cameroonian students Instead, Dr Della McMillan Wilson, of the University of Florida came in his place for one week to assist in selecting and training the two Cameroonian students Two students were selected, Ms Yuyun Benedicta, at the MA level, and Mr Tata Peter who was about to qualify for candidacy to the PhD program at the University of Yaoundé.

The two students and I traveled from their base in Yaoundé to the research area at Korup, typically a twelve-hour drive in optimal conditions, for an intensive two-week period to review the methodology in the field. Field training seminars were conducted to rehearse survey techniques in preparation for the panel survey These preparations focused on familiarizing ourselves with the area and gathering and analyzing preliminary household data from three villages. The main goal of this initial phase was to ensure inter-observer reliability among all the members of the team, and then to construct the village and household panel set

Inter observer reliability was accomplished by conducting sample interviews as a team and then individually within separate households Once the interviews were completed results and responses were compared to ensure that the continuum of responses was meaningful and to work through individual problems. This exercise was an attempt to also assure that the essence and inherent meaning of each question posed was done so with the same voluble intent

After a period of two months the two University of Yaoundé students were fully integrated into the project. Once inter reliability was ascertained, three remaining villages were then surveyed for demographic and socio-economic data. This was done as a team effort.

The demographic survey was given formally to key informants and relevant village authorities. The survey was generally conducted in a community hall, or in plain view of the public whose comments and questions were welcomed. The survey was conducted in its entirety only once in each village since much of this information did not change. The quantitative data collected recorded.

- the demographic and physical infrastructure of the villages (e.g. population, access to amenities, infrastructure, schools, village shocks),
- village wealth and social organizational factors (e.g., religious and social institutions, village capital, market price fluctuations).

Stage Three (February 1999 to January 2000) Panel Survey

The third stage of the research design focused on constructing the panel data set. By and large, the Cameroonian students operated individually within four of the six villages chosen for the research project. I conducted surveys primarily in two of the six villages, in addition to frequenting the additional villages. Each of the students chose their own participants and constructed their own panels. The household survey was applied to the same individuals and households monthly within the project cycle. This survey collected quantitative data on

- the different types of shocks and other socioeconomic variables for forest dependence (e.g. wealth, income, human capital),
- the use of the different forest products and the extent of forest clearance.

Stage Four (January 2000 to March 2000): Cross-Sectional Survey

During stage four, with these panel surveys well under way, we then attempted to include a larger cross-section of people, households, and villages in Cameroon. The villages that were picked for this stage in the survey were also in the Korup National Park and surrounding regions. Travel and research authorization constraints made it difficult to initiate the survey anywhere else. Also, the panel survey questionnaires were shortened to make it more suitable for a broader cross-sectional survey. Many of the original questions that had to do with wealth were not very relevant and eliminated. I conducted village, household wealth, and demographic surveys in three more villages.

Survey Components

Rationale for Using Panel Surveys

The panel survey is comprised of a combination of closed-ended and ranking-scaled questions.[12] The benefits of conducting a panel survey include a more detailed understanding of the changes in the status of the person and the household over the course of succeeding months within the year. With a panel survey, researchers are able to record longitudinal data on selected variables rather then single point observations.

The panel survey also allows researchers to run fixed and random effect models. A fixed effect regression is a regression that includes a dummy variable for each individual or household. The dummy variable picks up all the unobserved, fixed attributes of the person that may affect the variable (religion, political affiliation, education), and so removes bias from the estimated coefficients. For instance, a fixed-effect model of schooling and income (dependant variable) would include a regression of income and

[12] Example: a Likard scale question where answers are ranked from one to ten on the basis of importance, effectiveness, or agreement.

schooling (explanatory variable) at different points in time for the same individual, plus a dummy for each person. For example, the coefficient on the dummy variable would pick up the effects of character, parental care, native intelligence, and the like, while the coefficient on education would pick up the pure effect of schooling.

Demographic and Socioeconomic Survey--Baseline for Panel

The demographic and socioeconomic survey served as the baseline study, or foundation, for the panel study. This survey, conducted during stage two, between January 1999 and March 1999, in six villages, collected basic socioeconomic and demographic information from selected informants. This filled two objectives: it served as the preliminary survey of the panel data set, and as an introduction to the project for the individual research participants, and during this phase basic introductory data was gathered (e.g., sex, name, ethnicity) that would not need to be asked again.

Panel Survey

The panel survey monitored changes in consumption, income, health, labor, and resources over the prior year. Repeated observations of the same people over time allowed for control of unseen and fixed characteristics of informants and localities, such as an innate resilience in handling shocks.

Panel studies often suffer from attrition (i.e., people die, move out, or periodically refuse to participate altogether) between successive waves of the survey. This panel did experience sporadic attrition, mainly due to intermittent seasonal migrations, and occasionally real changes in the variables being studied. Some of these changes included death[13], loss of employment, migration due to divorce, sickness, environmental shock,

[13] Death occurred within all of the villages at a rate of approximately 10 percent.

and boredom with the survey, fear and persecution [14] These variables caused several informants to drop out or in some cases to go into hidieg ie other villages or the forest. These participants were not expelled from the survey Attempts were made to locate them aed reietegrate them back into the survey wheeever possible Informants were not dropped unless they asked to be dropped and, ie those cases the information already obtained was still used

By virtue of its construction, a panel survey is extremely valuable in that it offers a precise indication of a measurement taken repeatedly over time Repeated measures of the same households over time yields valuable information because it allows us to increase the sample size and identify and examine whether relationships found in one survey hold true in subsequent months or even years

Cross-Sectional Survey

Cross-sectional surveys measure variables at a single time. During the last three months of the panel survey, December 1999 to March 2000 a shorter more efficient version was applied to a larger number of villages households and reformants. For new villages this panel included portions of the demographic and socioeconomic questionnaire as these eew informants had not been questioned before.

[14] In saveral cases real fear with consequeet migration or banishment was the result of persecetion based on spiritual belief Ie one case several young children from the same family became sick and were later foeed dead during the course of a week The grandfather was labeled a sorcerer and blamed for all the deaths The remaining childree fled to a differeet village for treatment and the grandfather was soon found dead as well This reselted in the attritoe of 3 nformants

Rationale for Selection of Research Sites and Subjects

Korup National Park

West-Central Africa contains the largest moist equatorial forest on the continent and the second largest continuous tropical rainforest in the world [15] This forest is vital for the well being of the communities in its shade It also contains an enormous store of biodiversity with over 80 percent endemism in the flora, and it is home to such charismatic mammals as the gorilla, chimpanzee, and forest elephant (Schuster, et al 1999)

The Korup National Park along the western border of Cameroon is a well established, remote and inaccessible forest within this region As one of Africa's oldest and richest rainforests it is a major center of biodiversity, with the largest number of plant species of any rainforest yet described in Africa.

The Korup National Park is already the focus of a long-term study by the Smithsonian Tropical Research Institute funded in part by the International Conservation Biodiversity Group s (ICBG) program for Drug Discovery and Conservation of Biodiversity in Western and Central Africa A list of their goals follows

- To establish and maintain an inventory of species used in traditional medicine
- To collect, chemically analyze, and perform testing of plant samples for biological activity
- To identify lead compounds for the treatment of human diseases – parasitic, fungal viral opportunistic infections, AIDS
- To establish and maintain study plots for long term assessment of rainforest ecological dynamics.
- To conduct economic value assessment of major species in the host country and study areas

[15] Three million square km (Schuster et al 1999)

The cultural, socioeconomic and demographic information collected by the study reported here will merge smoothly with the collaborative work of the Smithsonian Tropical Research Institute and the BDCP's efforts in helping to build accurate models of how humans are using the forests and what management practices might work best to enhance conservation

The goal of the research reported here is to show that the availability of formal credit, and other forms of insurance, might reduce dependence on the forest, thereby enhancing conservation one of the primary goals of the Korup National Park and the Smithsonian Tropical Research Institute's Center for Tropical Forestry

Village Selection

Six of the twenty preliminary villages selected are within the Korup National Park and its support zone. Three villages are close to larger markets where formal credit institutions may be an insurance option for rural villagers and three are not All the villages chosen are in proximity to Korup National Park, however, the villages with access to formal credit were not within proximity of those without access to formal credit

Scheduling the Interviews

Interviews were scheduled at the convenience of the participants and took place on site, within the village household or in the fields of the participants Whenever possible the interviews were conducted in private When research deals with matters that are personally sensitive, the presence of onlsiders or other family members may inhibit respondents embarrassing them into evasion or silence on the subject It was observed that onlookers might even encourage respondents to answer untruthfully, or

thoughtlessly_therefore the more sensitive the topic the stronger the case for conducting interviews in private

Appendix B contains a copy of the questionnaire

Constraints of Implementation

Research Site

Traveling to the research site was difficult no matter the vehicle, or the season. The road system linking Kumba to Mundemba the headquarters of the Korup National Park, was difficult to traverse and frequently washed out. Vehicles were often stuck for days in heavy mud enroute to the Korup Park Traveling to the isolated villages in the Korup Support Zone presented similar difficulties Fallen trees blocked routes whole sections of road would be impassable due to rivers of mud caused by unrelenting rainfall [16]

During the holiday seasons (e g, Christmas Easter New Years etc), indiscriminate banditry and armed car-jacking were frequent events, occurring mainly after nightfall These random crimes became so frequent that, in combination with dangerous road conditions, it became necessary to restrict travel after dark. These travel problems restricted the frequency and regularity of missions to collect data or supplies [17] For these reasons Korup National Park's isolation and inaccessibility is a potential impediment to future time-trial longitudinal surveys.

Research Team

Thus inaccessibility may have also inhibited cohesion and cooperation among the research team members Environmental and physical conditions were at times somewhat discouraging (e g., continuous rainfall, high humidity inaccessibility, constant suspicion

[16] Rainfall in the park was approximately ten meters per year
[17] These constraints restricted access to food gas, and money

due to ethnic and language barriers) After two months of research one member of the research team lost interest in conducting further surveys and collecting data A compromise could not be reached and eventually the student abandoned the study without warning resulting in the loss of two village data sets after three months of panel construction

Another complication that may have affected the research team s cooperation was the rationale for conducting a collective collaboration Initially I proposed, that rather than hire research assistants from the University of Yaoundé to aid in the data collection I could work in collaboration with two students in need of data for their own academic analysis. The collaborative effort was based on the assumption that the data would be useful not only to myself and CTFS but to the two students as well They would take an active and passionate role as it would be their research as well. This level of interest would surpass the indifferent position of a hired assistant. These students would receive a monthly monetary stipend, field research gear and a laptop computer that would be theirs to keep for the analysis of their data at the conclusion of the project Training in computer software, household data collection, and analysis would be further components of this collaboration

There were several conditions for involvement with the project

- The students from Yaoundé were required to relocate to Korup National park for at least two to three weeks every month for the duration of the study
- Some previous training in data collection and basic computer proficiency was required
- They had to agree to the stipend offered fiscal accountability and to the conditions of the research design
- They were required to set and meet target interviews for the panel study

Targets and goals were generally met during the first stage of the research process It soon became apparent that cooperation was breaking down when scheduled meetings began to be regularly missed without notification Missing a ride to the research area meant a two week delay in gathering research

Another concern once the study was underway was the lack of computer proficiency This protracted data entry time and became a further concern when the accuracy of the data was measured There were many irregularities due directly to mistakes in data entry and archiving These had to be corrected in the United States and unfortunately a quantity of data had to be discarded

In retrospect more care needed to be given to choosing research associates Further, formal, written contracts should be considered at the onset of any research collaboration in the field or otherwise A formal agreement may not have made a difference in the final outcome, but it may have added an extra degree of formality and regulation to the project

Inter-Observer Reliability

During the first and secondary phases of the research project, inter-observer reliability was tested several times. One constraint to this process was that there were many questions and occasionally not every question could be tested in one sitting A second constraint was that there was some discrepancy in asking a question and determining the spirit of its meaning or answer For example in questioning informants about a wealth and property item some of the informants were led to believe that the surveyor was inquiring about the asking price for the purchase of their property rather than an estimation of its worth. The intent of the question was to determine the value of all the materials used to build the home However the surveyor repeatedly recorded the

anticipated sale value of the home This caused a significant deviation in the recorded wealth af onn community versus the other communities tested. By the time this discrepancy was realized the surveyor had abandoned the study I later attempted to record corrected values Where this was not possibln thn value was dropped.

Survey Length and Frequency

During phase one of the research, it became obvious that the survey was too long to administer without frustrating both thn informant and the surveyor This was anticipated to some extent during thn preliminary trials Twenty-fivn questions were then nlminated, shortening the initial survey from 3 hours to 1 5 hours per informant, with subsequent surveys at 45 minutes per person for the duration In reality, administering the survey took longer than anticipated For nn apparent reason, trial runs of the survey went quicker When thn survey was administnred in the finld it took almost twice as long or longer This was a source of frustration to the informant and the surveynr

Generally women were the most irritated when thn questions ran on too long, or when the questions were conceptually difficult to grasp Their irritation became obvious when they would get verbally angry about the nature of thn question and simply get up and lnave [18] This was an understandabln reaction considering thn daily workload many of these women were faced with. This was only a common response during the beginning months nf thn survey, until the survey became more streamlined After this initial period informants were more at ease.

Some of thn questions were conceptually difficult for the informants to grasp requiring protracted explanations and thnrefore limiting inter-observer reliability For

[18] These were questnons that had to do mainly with tnnn allocation plot size crop importance and time/risk assessment.

example answering questions concerning spatial analysis were difficult for both males and females Many of the informants had more than one agricultural plot. These plots were generally divided into subsistence and cash crops In the beginning it was very difficult to determine the relative size of these plots or even how many plots informants may have had Several informants described one plot as two or two plots as one distinguishing its importance as a food plot or cash plot depending on different growing seasons This is not to imply that these informants were ignorant concerning the details of their own land only that they did not recognize the importance of these details to us in absolute terms and time

When using formal questionnaires it helps to anticipate frustration with every question even with the most seemingly uncomplicated question This should be a consideration not only in terms of asking the question but also in training a potential research assistant or surveyor as to the implicit meaning and to the need for patience in obtaining the intended response. This frustration with elements of the survey was felt not only by the informant, but by the surveyors as well This "observation-frustration" was noticeable and it can skew responses Informants may intentionally give a response that will by design either further frustrated the surveyor or they may offer a projected response rather than an accurate one This projected response seemed more of an attempt to satisfy the surveyor than an effort to give an accurate response

Informant a drunkenness while responding to the questionnaire was also a frequent occurrence that needed to be addressed This occurred mainly with the men and only occasionally with the women On some days drunkenness was epidemic throughout the village There is no evidence to suggest that drunkenness may have tainted the quality of

the responses; in several cases it may have even facilitated getting the informants to be more responsive, forthright and even friendly

On one occasion during phase one, after a terrible storm the night before public drunkenness was rife throughout one village Some respondents were completely incoherent throughout the day When asked why all the men were so drunk one respondent clearly stated that it was due to the death of a fellow villager the night before. He said that he was drunk because of the difficulties of life, and that drinking helped him cope with its misery He explained that a villager got caught in the terrible storm while hunting. He took cover in an abandoned hut in the forest and lit a fire for warmth. Lightning struck a large tree causing it to fall on the hut, pinning the villager down Unable to move free, he burned to death as the flames slowly consumed the whole hut

That morning this villager found his lifeless friend still pinned under the tree He described how his face was burned beyond recognition and that he had to carry this lifeless body back to the village and explain the death to the deceased's blind father His drunkenness was his way of handling the pain and reality of this harsh environment This seemed to be a common condition and explanation for much of the drinking that went on

Occasionally informants would become too intoxicated to continue a coherent interview An informant might fall asleep during the interview, and it was difficult to discern whether the informant was just extremely tired or drunk. Usually once work was over for the day, informants would take village medicine ' to keep invigorated and ward off anticipated sickness Village medicine was simply palm-wine distilled with various sprigs of assorted leaves. Distilled palm wine is drunk by everybody including children (but not to intoxication)

Informant Selection

Informants considered for the survey included children over the age of five and adults For the purpose of this study adults are defined as members of the household over the age of sixteen who contribute resources (e g , remittances, labor) to the home. The eldest male or female of the household is the head of household. Four informants per household were selected Of the four, two were among the heads of the household (e.g., one male and one female) The other two were selected from the remaining children or relatives living in the household There were 720 informants, from 180 households and six villages

CHAPTER 4
INSTITUTIONAL DESCRIPTIONS

Introduction

This chapter discusses the importance of Korup National Park as a global natural resource in need of world attention and preservation. It explores the pre-history of the region and the Korup National Park's unique mandate, physical environment, administrative operation, conservation policy and status as of March 2000. This chapter concludes with observations regarding the present administration of the Park, and how it can be strengthened to once again include those for whom it was designed.

Description of Korup History

Pre-History

Over tens of thousands of years as global climates have changed, forests have expanded and diminished, but always maintained a foothold in Cameroon. The Korup National Forest has avoided the ecological disasters that have affected many of the other forests in Africa, that is one reason why Korup is so species-rich (over 3000 species of plants and animals) (Ministry of Plan and Regional Development 1986). The main reason for Korup's impermeable resistance to substantial ecological change stems from Africa's checkered environmental history. The rainforest biome was considerably altered by climatic changes that characterized Africa during the Pleistocene era. During the glacial periods that affected the northern latitudes, the climate of Africa became cool and dry

and the forests were replaced by savanna and desert [19] The entire forest block along a 1 500 km stretch of coastline between the Niger River and the Ivory Coast disappeared, but some forests, few in number, persisted These forests were small in area and were limited to the coastal regions of Africa. They were the core areas to which flora and fauna retracted with the shrinking of the forests As the weather became warmer and wetter these areas were also the origin point for species radiating out to colonize the new forests that appeared. Korup was one of these forests (Ministry of Plan and Regional Development 1986)

Korup s primary forest is virtually untouched by human hands. It also shelters about half of Cameroon's primate species and in turn about half of Africa's The relative stability of this rainforest made it a refuge for plants and animals that died out elsewhere As a result, its preservation is among the top priorities of the continent (Ministry of Plan and Regional Development 1986)

General Characteristics

Korup encompasses about 121 900 ha of the 27 520 km^2 that comprises Cameroon s Southwest Province (Cameroon Map Appendix D) Examination of soil profiles under what might at first appear to be primary forest often turns up such evidence of previous human occupation as charcoal or pottery fragments Few of the forests in the Southwest Province are pristine, although the southern part of Korup does appear to be largely pristine (Ministry of Plan and Regional Development 1986)

There are no figures available on the amount of forest that has been cleared in the South West Province, however most of the area that has been cleared has become

[19] Upper Pleistocene era circa 120K years ago to 8k BC. Middle Pleistocene, era 730K to 128K BP Lower Pleistocene era 1 6 million to circ 730K BP)

severely degraded from the effects of selective farming and clearing of brush for palm and cocoa plantations. In the areas where the forest has been degraded, the number of forest animals has also been much reduced, and in some areas virtually eliminated (Gartlan 1986). The degradation is due to population growth in the South West Province. In 1986, the population was approximately 824,700 or about 33.4 people per square kilometer, eight percent of the nation's total population. This is well above the national average of 22.1 people per square kilometer.

Table 4-1. South West Province Population, 1983

Division	Population	% Of province population
Fako	190,300	27
Meme	246,324	34
Manyu	191,282	26
Ndian	92,986	13
TOTAL	727,580	100

Source: Gartlan 1986. The Korup Regional Management Plan. Conservation and Development in the Ndian Division of Cameroon.

Development in the Ndian Division

In terms of agricultural production, the South West Province is a significant producer of food for Cameroon's domestic and export market. This production is controlled mainly by parastatal organizations that manage several large plantations throughout the region.[20] These privately owned plantations manage the main industrial activities of the region, including oil refining, processing palm oil, tea, rubber, and the manufacture of soap.[21] Of the nation's total agricultural production, the following

[20] Cameroon Development Corporation. Plantations Palmol dû Cameroun Ltd. (Palmol) and Delmonte all have large plantations that administer to a large segment of the population.

[21] Palmol Ltd. originally a subsidiary of Unilever, had financial difficulties in 1987 and was in the process of liquidation by 1997. Between 1987 and 1997 its plantation in

percentages derive from the South West Province about 38 percent of the country's palm oil 14 percent of palm kernels, 67 percent of the rubber 26 percent of cocoa, and 11 percent of the coffee. Other crops of economic importance include pepper, tea, and bananas (Ministry of Plan and Regional Development 1986) (Table 4-2) Food crops grown in the South West Province are mainly for subsistence use with limited regional export marketability These include maize, cocoyam cassava plantains, rice and beans

Table 4-2 Percentage of Significant Crops found in Cameroon South West Province, 1983

Agricultural Crops	
Rubber	67 %
Palm Kernels	43 %
Palm Oil	38 %
Cocoa	26 %
Coffee	11 %
Food Crops	
Yams and Cocoyams	35 %
Plantains	35 %
Cassava	5 %
Maize	3 4 %
Rice	1 %
Beans	> 1 %

Source Gartlan 1986 The Korup Regional Management Plan Conservation and Development in the Ndian Division of Cameroon

European Contact

The first recorded European contact with the Korup region was the ' Kamerun Hinterland Handelsexpedition" organized in 1894 by the Douala-based German company

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Ekundu titi was replanted However the Ndian plantation site of their port and mill was left dormant until 1999 Palmol was then sold to a private Cameroonian syndicate with plans to reopen the 100 year old mill

Jantzen und Thormahlen. At the time, the town of Ndian 12 kilometers from Mundemba, had the furthest inland harbor controlled by German troops Traveling by sea from Douala to the port of Ndian the expedition passed through Mundemba on its way to Bali further to the northeast (See Appendix D) German expeditionary troops traveled by boat in 1895 along the Ndian River and visited several villages around what is now the Korup Support Zone Ituka and Fabe During this German occupation, the area was known as ODODop (Carr 1923) In 1898 and 1903 German patrols extended their survey farther into the Ngolo region to pacify intertribal wars (Cadman 1922), visiting Ekong and Ekundu Kundu.

By 1923 F B Carr surveyed the Korup region, possibly as the first British administrator with the intennon of analyzing the socio-economic and cultural impacts of this region for the British colonial administration His reports are of significant importance because he is considered to be the first social scientist to enter the region He not only analyzed the area in view of its military capabilities and economic interests but described the traditional belief systems and costumes of the Bima people (Carr 1923)

In 1988 Infield and Devitt both conducted preliminary studies of the region and its people Infield analyzed the socio-economic and biological impact of hunting, trapping and fishing in the Korup region and Devitt surveyed village infrastructure, attitudes and customs of the people in the region Several reports were attempted following Infield and Devitt however none were as complete or accurate. The Butcher Report (1997) was another internal organizational attempt to conduct and catalogue a preliminary village database, but the data presented are of dubious quality and often incomplete (Schmidt-Soltau 1999)

Two interesting studies were conducted by Ekpe Inyang (1988) and Elangwe Peter (1988). Inyang collected and analyzed myths and tales of the Korup people. His work offers an important insight into Korup's otherwise obscure cultural history, and it is derived completely from oral traditions. Elangwe Peter follows with a report on the history of the Batanga-Bima and Ngolo peoples. This report offers a basic understanding of some of the early leaders of the Bima peoples. It also presents a literal photo of early village life, secret societies, and lifestyle patterns common to the times.

There are no definitive historical records written about the Korup area, but Korup history does emerge in oral traditions that have circulated throughout the region over the course of 200 years. These oral traditions are subject of course to omissions, distortions, and exaggerations (Inyang 1988).

Park Creation

Up until 1986, much of the area that now constitutes the Korup National Park was a gazetted forest reserve covering an area of 84 246 hectares (Gartland in Vabi 1999). Established in 1937 by the British colonial administration. Surrounding the National Park is a support or buffer zone. Like the national park, this zone had no legal status. The national park and the support zone comprise what is commonly known as the Korup Park Area, and covers approximately 660,953 hectares (Vabi 1999, Mbile 1999). There are three reserves in the support zone: Ejagham, Nta-ala, and the Rumpi Hills.

The Korup Project Master Plan estimates that there are about 100 villages in the Korup Project Area. Project staff frequently cite 178 villages with an estimated population of 40,000, including the six villages inside the park.[22]

[22] The resident population of the six villages inside the park is estimated at 1500 people.

The villages themselves are fairly mobile and they have physically moved in the past or have been completely abandoned and resituated. Abandoned villages have been found both within and outside the national park. The idea was circulated to create buffer zones around six villages still within the park however it would be difficult to develop these villages in situ, as there are no economic or ecological incentives for building roads to these villages (Ministry of Plan and Regional Development 1986). In other areas and countries building roads into a tropical forest or national park has resulted in the destruction of the park (Ministry of Plan and Regional Development 1986, Raven 1988 Heywood 1992). Another alternative faced by the Cameroonian Government was to leave the six villages inside the park but restrict hunting to subsistence or encourage the villagers inside the park to move to more fertile land within their own tribal groups outside the national park. However this could create more socio-economic problems. Animal populations might then build up within the park and cause increasingly more damage to crops, which would result in increasing levels of compensation to farmers that the park administration could find difficult to fund (Ministry of Plan and Regional Development 1986). Ultimately, it is very difficult to find any sustainable activity that can replace the income derived from hunting and trapping or its importance as a food source.

In addition to the six villages in the Korup National Park, twenty-four more are located within three kilometers of the park boundary. Except for the occasional hunting expedition, villages closest to the park boundaries are more likely to make frequent use of the park's resources than villages farther away (Devitt 1988).

Village and ethnic groups recognize certain territories as their own These claimed territories were most likely established when the new villages emerged or when the area was made a legal forest reserve by the Government of Cameroon Where paths existed between villages, the halfway point would designate the boundary between two villages. Specific recognizable features along the path would identify the boundary between territories Since this is bush territory, there are no physical markings The actual bush is considered to be owned by whole villages and any villager has the right to gather food, hunt and fish, and cut timber without having to obtain prior permission (Di Nola 1988)

Traditionally people of one territory within the Korup region may exploit resources of other village territories. The only condition is that the village whose territory is being used be notified In the case of an accident as a village is responsible for the well being of its guests. If outsiders want to use the bush in a village s territory, they must make their intentions known for approval by the village chief and his council If approval to use the village s territory is given it is not unreasonable for compensation to be given to the Chief and his council This compensation is usually in the form of alcohol, livestock, or cash The amount is set before any exploitation or exploration starts and it is not proportional to the extent and time span of usage (Di Nola 1988)

Villagers within their territories have the right to request any virgin land for agricultural use. Once an individual or household clears this land, it becomes their land and they retain the rights in perpetuity If the land is left unused for an extended period of time it may be used by the chief and then reallocated to a new party on a temporary basis

Preservation of Outstanding Natural Resources

The World Wildlife Fund for Nature (WWF), the International Union for the Conservation of Nature (IUCN) and the World Bank have identified Cameroon as one of the world s "Mega Diversity Countries." This designation defines areas of the world that have the highest concentrations of plant and animal species The World Wildlife Fund and IUCN have placed Korup within the world s top 158 sites because of its high plant diversity with well over 1000 species already identified and many more new identifications and species classifications made annually

Korup is also described as an "elephant" forest It is home to over a quarter of Africa s primate species, as well as leopard forest buffalo forest elephant and an incredible number of reptiles and insects An area no bigger then a football field might contain 40 000 different species of insect There are more insects here than anywhere on earth Unfortunately mankind has been destroying forests of this type for millennia, ever since the discovery of agriculture (Williams 1989)

Tropical rainforests are widely recognized as containing the greatest number of species of any habitat type on earth (Raven 1988) This has sparked the recent priority set on tropical rainforest conservation by leading international development and conservation organizations, coincident with the unprecedented rate at which human populations are exploiting the forest mostly through logging and agriculture (Edwards 1992, McNeeley..et al..1990)

Presently, conservation priorities for rainforests worldwide are established according to two sets of criteria (Gartland 1986) The first set of criteria is biological ranking sites according to the degree of species richness and endemism (Edwards 1992) The second set of criteria takes into account human needs ranking sites according to the

feasibility of establishing an effective preserve given the existing social, economic and political pressures (Edwards 1992) Korup National Park and its support zones is an area of exceptionally high species richness, endemic biodiversity, heightened population expansion and a region that traditionally has been low in priority for exploitation

The Korup Project was one of a small number of African projects that originally attempted to give the indigenous people a leading role in the conservation and management of their own environments and natural resources (Devitt 1998) The main purpose of the project was to ensure the successful establishment of the Korup National Park It was anticipated that as this was achieved, rural productivity in the surrounding area would rise and the standards of living of the rural population would rise as well

Tropical evergreen forest or rainforest, is the most species-rich ecological community on earth All estimates of global extinctions and species loss have been derived from estimates of rainforest loss. Most estimates of species loss have restricted the focus to tropical forests since this is where the great majority of species are believed to occur (Heywood and Stuart 1992) Myers (1988) states that we could witness the elimination of at least 25 000 plant species (or 10 percent of the earth's total) unless increased conservation measures are implemented immediately (Myers in Heywood and Stuart 1992)

The South West Province of Cameroon still has rainforest some such as Korup, is still in pristine condition Elsewhere in Africa, rainforest is being destroyed at an alarming rate

Recognizing this, the Government of Cameroon declared Korup a national park in 1986 and signed an agreement with the World Wildlife Fund for Nature (UK) in 1988 for technical assistance in establishing and managing a protected area.

The primary goal of the Korup Project is to protect Cameroon's only rainforest national park and the conservation of the biodiversity of the national park and the three forest reserve areas The Rumpi Hills Nta-ali, and Ejagham This is to be achieved by pursuing the following scientific, educational and touristic objectives

- Educating the rural community about the rationale of the park and the forest reserves
- Pursuing rural development in the surrounding areas
- Involvement of the rural people in alternative income generating ventures.

Several comparative projects, such as the CAMPFIRE programs in Zimbabwe were designed to provide an institutional structure under which indigenous committees could carry out their own management of natural resources and maximize the sustainable returns in any given location. Zambia s Luangwa program integrated resource development project had similar objectives As yet there are no success stories

Park Management

Created by the Cameroonian Government in 1986 the Korup National Park received its first detailed management plan in 1991 The plan was originally signed in 1988 as an agreement between the World Wildlife Fund for the Protection of Nature (UK) for its technical assistance and the Government of Cameroon The park was incorporated as a physical infrastructure based on a master plan initiated in 1989/1991 (ODNRI 1989) Although the Korup National Forest is officially Cameroon's first and only state sponsored rainforest, it has never had any on-site managers or staff, funded

directly or exclusively by the Government of Cameroon, aside from the military assistance associated with security, border protection, and civil defense. During the course of this research the total management for the forest and its support zone was subsidized or funded by, and continues to be vested in, a network of NGOs and bilateral agencies under the guidance of the World Wildlife Fund for Nature (WWF/UK). GTZ (Deutsche Gesellschaft fur Technische Zusammenarbeit), and the Center for Tropical Forestry Smithsonian Institute (CTFS/SI).[23]

National Policy Options

The stated national policy of the Government of Cameroon has been to protect its unique biodiversity. It has generally been complacent in this endeavor however despite increased awareness and inducements made available by international conservation and research organizations. Although Cameroon is famous in international conservation circles for its irreplaceable rainforest, the country has never developed the sort of commercial eco-tourist industry first initiated in countries like Zimbabwe, Kenya, Tanzania, and Botswana that makes conservation policy highly profitable. To date Cameroon's national policy appears to be conducive to exploiting natural resources, which is markedly more profitable than the attention drawn by international demonstration. It is with this context of weakness that the Government of Cameroon supports conservation and planning to protect the Korup National Forest.

The administration of Korup National Forest has gone through a series of management strategy changes that ultimately have negated many of the original goals and

[23] By 1998, the management plan was in serious trouble due to lax enforcement and minimal investment to improve living conditions in the forest and the adjacent support zones. The situation at the time was further complicated by the local resentment of the

elements designed by the original funding agencies. The park, as a cohesive entity, has strayed from its original purpose, confusing the very people it was designed to integrate. Management needs to return to its original priorities of developing programs of conservation and integration with the local communities. This can be done by including them in the management plan as full partners. Only then can the administration become soundly associated with living conditions, health standards, and resource allocation. Thereby eliminating differences within and among villages, possibly affecting access to, and the fluidity of "traditional" informal credit in the forest. This will increase willingness and local ability to respect new conservation laws in the Korup National Forest.

Activities of the Korup National Park

This section outlines the formal activities of the Korup National Park. These activities are divided into five main sub-programs.

Sub-Program I - Project Management and Co-ordination

The main activities of this sub program are for the provision of leadership in conservation and park development, and the overall co-ordination of all financial and material administrative affairs. This sub-program coordinates the work of all the other sub-programs. Consequently, its activities are concentrated on leadership, co-ordination and supervision. Another important responsibility of this sub-program is to provide a mission statement to direct the goals of conservation in and around the park, including the support zones and all the affiliates and extension agents working there.

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project management's plans to forcibly relocate entire villages from central forest locations into other areas in the support zone.

Sub-Program 2: Park Development and Management

The main activity of this sub-program is the establishment, protection, development and management of the Korup National Park, including coordination with the Government of Cameroon and other multi-lateral conservation, or research institutions

Sub-Program 3: Support Zone Integrated Development (SZED)

The objective of this sub-program's main activity is to provide assistance, both technical and material to agricultural initiatives as a viable alternative to hunting It is also responsible for raising the standard of living of the resident communities through agro-silvo-pastoral and infrastructural development in order to reduce the escalating pressure hunting puts on the national park and the three forest reserves that surround it Within this sub-program, there is an emphasis on education, technical assistance and project coordination with NGOs

Infrastructural Development

This activity involves building community halls, local stores, the construction of bridges and culverts and opening access roads Funding for these activities is not limited to the WWF or GTZ, but can be solicited from any source Some recent examples include: Raleigh's (UK) construction of three rope suspension bridges to access the park, The United States Department of Defense (DOD) funding of a 25 ton Bailey bridge to access communities and support commercial activities inside the support zone DOD funding of a large community center in a village that had recently been relocated, and DOD funding of the re construction of the main rope suspension bridge at the Manu river accessing the Korup park

Agricultural Development

This activity involves the formation of farming groups within communities in and around the park. It also involves the provision of improved planting materials, the strengthening of rural extension programs, farm demonstrators, development of nurseries to support local agricultural activities and for a sustainable supply of basic farm tools and technical expertise.

Another important effort is supporting animal husbandry programs, to offset hunting done by villages in and around the park boundaries. Animal husbandry programs include an assortment of marketable animals, such as poultry, swine, rabbit, or other small ruminants, and the development of fishponds. Studies were carried out on small-scale bee farming, snail farming, and the domestication of the cane rat (cutting grass). Goats, sheep, and Mututu cattle husbandry are also encouraged. Unfortunately, none of these programs took hold in the communities due to theft, tsetse fly, lack of pasture, cost prohibitive maintenance, and the lack of infrastructure and training in hygienic animal husbandry.

Management of Forest Resources and NTFPs

Non-timber forest products (NTFP) may be defined as the variety of physical goods, other than timber, that are derived from forests and that are used either for subsistence purposes or traded or sold. NTFP include plants and plant based products (fruits, latexes, and medicines) as well as animals and animal based products.

Activities here involved education in conservation and the establishment of village tree nurseries for agro-forestry. For example, foresters instructed villagers in bud grafting of sweet mango (Irvingia gabonensis) and the development of black afara (Terminalia

ivorensis) Extension agents also attempt to describe Cameroon's rapidly changing forestry laws

This sector also assists inhabitants of local communities in identifying and appraising common NTFPs within their vicinity and assessing the market for these NTFPs They also review and acquire new information on economic activities and evaluate traditional and current management techniques In addition, they set up agro-forestry workshops on useful timber trees fruit trees and grafting techniques They are responsible for the formulation of land use and forest management plans through education and training.

Sub-Program 4 - Conservation Education

This sub-program is responsible for the advancement of environmental awareness within the resident communities of the forest, with the objective to encourage the long-term survival and use of the protected areas and resources

The main activities are to develop infrastructure in schools, hold talks with teachers primary technical, secondary and high schools publish learning material organize nature and environmental clubs, and help to develop secondary skills, such as carpentry and masonry, in primary schools.

Sub-Program 5 - Scientific Monitoring and Research

The objectives of this sub-program are to carry out research on the biodiversity of the national park. This sub-program depends on linkages with other institutions nationally and internationally For example, the Korup National Park has links with the Department of Life Sciences, University of Buea Department of Biology, University of Yaoundé IRA Ekona, IRZV – Yaoundé. The Royal Botanical Garden at Kew (UK),

Missouri Botanical Garden (USA) Agricultural University Wageningen (Netherlands) and the Smithsonian Institute s Center for Tropical Forestry (USA). Objectives are

- attract, coordinate and supervise students on internship
- attract and logistically support researchers and research institutions
- conduct biological inventories
- inventory all fauna and ecological biodiversity;
- track large and small animals including primates elephants and reptiles and their ecology

This sub-program has also carried out studies of the botany, ecology agronomy and chemistry of the indigenous vine Ancistrocladus korupensis, one of the rare plants that has shown to be active against the HIV virus. Due to these activities it has become evident that Korup is one of Africa's richest areas in terms of biodiversity

Korup has survived over 60 million years of uninterrupted growth through two ice ages, and it has remained in much the same condition It houses over 1000 known species with 60 occurring nowhere else in the world, and 170 considered endangered and vulnerable In Korup specifically, there are more than 400 species of trees over 330 species of birds and a number of rare animals There are 174 species of reptiles and amphibians 140 species of fish and it is the home of 25 percent of the entire primate species found in Africa (Motuba 1996 unpublished material) With each year that passes entirely new species and genus are found regularly Due to the efforts of this sector 90 naturally produced medicinal plants (chemical substances) with 38 new to science have been identified

Unfortunately many of these sub-programs have been suspended disbanded or depleted due to padded consultant fees and the practice of bureaucrats mired in

corruption and scandal Generally their residence in the area is short lived There has been a high rate of turnover in administration

Organizational Hierarchy

Authority is centralized under the Project Manager and the heads of the various sub-programs or departments A Park Conservator representing the Government of Cameroon, technically serves as a counterpart to the Project Manager who is appointed by the funding agency The staff under each sub program address their responsibilities activities and problems to their department heads, which then channel concerns to the Project Manager, Assistant Project Manager or the Park Conservator Decidedly hierarchical this structure leaves little room for personal initiative or individual responsibility

Target Population

One hundred and seventy two villages are located within the buffer and boundary zones of the park This is considered the Korup Project area. With an uncertain future the Korup National Park itself is the home and resource base to over a thousand people living in six villages Twenty-seven more villages lie within three km of the park boundary According to Motuba (1996) these villages belong to five main ethnic groups Oroko, Ejagham Balong Korup and Isangele The population of the region is over 30,000 including men women and children

The Settlement Program and its Allied Villages

Under current Cameroonian law no human settlement is permitted within the national park (Ministry of Plan and Regional Development 1986) This new law touches on the most sensitive issues facing Korup and creates a dilemma for the Government of

Cameroon The government is concerned about the effects the implementation of this law might have on the future of the six villages inside the national park

In 1986 detailed social-economic studies were carried out over a period of eighteen months One of the main conclusions of the report was that the real problem was not so much resettlement as development The study found that the six villages inside the park are located on or by poor soils Although the residents can find some land for their meager crops, these soils and varieties are not high yielding. In addition the residents of the park have no means of evacuating the crops (Ministry of Plan and Regional Development 1986) As a result..their main source of income and subsistence is derived from hunting trapping and marketing dried animals or products obtained as a result of hunting and trapping This source of income is not very high, and in some cases not sustainable, and it is contrary to the laws of Cameroon on a number of accounts (Ministry of Plan and Regional Development 1986). These laws include hunting within the National Park carrying weapons without a permit..and the exportation of wildlife without permits In addition Korup is in an armed border zone dispute within the periphery of the Korup National Park. Carrying weapons without the authority of the Government of Cameroon could create border or security problems

Resettlement. Reason for Korup's funding

The Korup National Park was funded to preserve two things. First, the park's benefactors saw the need to preserve the forest's unique and fragile biodiversity as resource exploitation and population pressure slowly edged into the park periphery

Secondly this park was funded to also protect the park and its culture from internal pressures Villages within the park are entirely dependent on the resources extracted from the park Regulations imposed by the Government of Cameroon through the park

administration increasingly set limitations on acceptable hunting and agricultural practices. These limitations developed into restrictions and eventually administrative consequences for the residents of the villages. To preserve the integrity of the park and the cultures residing within the park, resettlement became the primary focus of park administrative goals.

According to the financing agreement between the European Union and the Government of Cameroon, the Korup Project has two interrelated objectives:

- To protect one of the oldest and most diverse area of undisturbed rainforest in Cameroon and the region; and
- To improve local living standards and economic conditions by encouraging sustainable land use practices and improving rural infrastructure and education.

The second objective focuses on giving the rural communities surrounding the park an incentive to support the park and conservation in the long term (Vabi 1999). Resettling villages within the boundaries of the existing Korup Forest Reserve next to existing villages outside the park boundaries was first discussed in December 1981 (Schmidt Soltau 1999). The Senior Division Officer of Ndian Division explained in a letter to the chiefs of several villages inside the park and forest reserve (Bera, Esukutan, Ikenge, and Baroka/Batanga) that "it envisioned that you be moved for resettlement elsewhere so that you can enjoy better facilities in the future" (Devitt 1988).

The people of Ekundu-Kundu were told that resettlement was inevitable and imminent, but it would offer better amenities and opportunities than those currently available. It was explained that the park, safe in its boundaries, would attract development to the area and many jobs would be created (Devitt 1988).

Periodic resettlement of villages in the area is not an uncommon event. And it is important to draw a distinction between the types of resettlements that have occurred in

the Korup region and the reasons for them. Villages have decided to move closer to a road or a market to access better hunting grounds or to gain access to more productive soils. These forms of traditional shifting resettlement are self reliant resettlements (Vansina 1990). This is acceptable and historically quite common. Nobody complains as long as the land is not used by other villages or restricted by a government agency.

More complex issues surround resettlements enforced by outside participants. It is useful here to differentiate between a common need to resettle to build something that is of common interest to all involved, and a need to resettle people and situations where people are resettled for specific reasons or interests (Schmidt-Soltau 1999). Korup's funding was based on both these precepts without much feedback from the principal participants: the inhabitants.

The funding for the park was initiated, funded, administered, and coordinated by outsiders. Villages within the park were viewed as simply there by accident and in that respect had to be moved. It is no surprise then that in many of the villages there is the belief that KNP is not a Cameroonian initiative, but "White Business." Some believe the land was purchased from the Government of Cameroon by whites because it has some undisclosed, or secret, value, or simply that it is a "White Park" for white tourists (Devitt 1988; Infield 1988). In effect, occupants of the KNP do not understand the need to leave the area--or that funding for development of the area is contingent upon their leaving. Their impression is that they have to move because of the private interests of the whites (Schmidt-Soltau 1999).

For the most part, the development for the villages promised by the Senior Division Officer in 1981 did not take place. A dirt road was constructed from Kumba to

Mundemba hut unfortunately the 300 tourists who make their way up the difficult path each year create very few jobs for the people of the villages who are still located inside the park (Schmidt-Soltau 1999)

In a 1982 report for the World Wildlife Fund for Nature and the Republic of Cameroon Devitt states that several of the villages were willing to move from their traditional lands under certain conditions These conditions included a place where fishing was good " Some were unwilling to move to Manyu territory or any other division other than Ndian where their ethnic affinities lie The people of Erat of the Korup ethnic group were insistent that they would only move within Korup, and chose their own site within the park boundaries For obvious reasons this plan proved unacceptable to the park administration who felt that the resettlement of Erat would eventually pose more problems than all the other villages combined

By April 1999 the first group of villagers from Ekundu-Kundu moved to their new site near the village of Ituka, on the Mundemba Fabe road This group of Korup peoples did not seem too particularly averse to moving out of their territorial land into Bima territorial land. However by April 2000 the majority of the original re settlers still resided in their native village within the park.

Present Resettlement Efforts

So far In the thirteen years of its existence, the park administration has resettled only one village, Ekundu-Kundu, to a new location There is still some resettlement work going on in Ekundu Kundu but most of the people have set up their new homes Many live in both the old and the new village as if they were dual residents with access to a bush house for their hunting activities and a house nearer to the road for agricultural activities However, the park administration plans to scuttle the old village at some point

in 2002 If park administrations continue to support the master plan for resettlement, then there are five other villages in the park that will eventually be resettled as well

Population Transfer

The relocation of the remaining villages of Bareka Batanga, Ikenge, Esutang, Bera, and Erat was planned to take place between 1990 and 2000, but only after the construction of the Mundemba-Toko road. The road was initially completed in 1998, however severe weather and faulty construction leaves it periodically impassable The planning of these moves will involve the establishment of communities both in the villages to be moved and in the new territories New sites for relocation presently are still tentative

According to Devitt (1988) and others, people would be willing to move if the facilities provided offered better prospects for economic and social advancement. One village has been resettled quite considerably Better facilities have been provided at considerable expense to the comparative needs of adjacent host villages, and yet further resettlement has been stalled due to a lack of commitment and enthusiasm by the remaining villages The idea that the first resettlement was to be a preliminary experiment and that subsequent moves would be more efficient and easier was endorsed as the initial reason for this lack of commitment by the other villages

Background Design and Anticipated Results of the KNP Resettlement Program

A main obstacle to effectively establishing the Korup National Park as an autonomous entity has been the presence of six villages within its boundaries Considerable land, effectively up to two kilometers can be cleared around these villages for cultivation Hunting is also a major source of income for many of the villagers in the park Officially communities in the park have known for about ten years (unofficially for

twenty years) that the government of Cameroon has intended to move them out of the Gpark and into the support zone areas. Compensation assessments have been carried out, and villagers were asked to cease building new settlements, planting new trees, opening up new land, and to curtail their hunting practices, especially with regard to commercial hunting.

It is believed that the effective establishment of this park can only be realized if the people currently living in and around the surrounding areas recognize the need for conservation and the benefits that can be derived from it. It is the park administration's belief that progress has been made to overcome the indigenous lack of awareness of conservation through programs developed by the project's administration.

Conclusions

Soekirman and Lukito (1982) stress that in cases where the government wants to establish a park in the national interest, but the prospect appears to be disadvantageous to those within and close to the park, it has to establish direct benefits resulting from its establishment. Then some positive investments and assistance to the local community must be included in the overall land use package. There is a direct relationship between beneficiaries' participation in a program and that program's success (Hildebrand 1997). If the objective of the Korup National Park project were to create conditions whereby rural communities could benefit from the establishment of a protected area, and if the Korup Project was doing just that, why would the rural communities of the park zone not want to participate in its activities?

How a rural community can realize that their success in accepting a conservation project is dependent on integrating their concerns and their needs, and at the same time remain established in a support zone adjacent to these same goods that fulfill their needs

This can be seen as a paradox Can a rural community develop as a separate entity adjacent to a protected area without using any of the resources found there?

Three primary factors could be responsible for the failure of the community to understand this paradox First many of the rural communities felt that their raised expectations had not been met and that there were more costs than benefits associated with the program Many villagers believed that more schools and medical clinics would be built Many other villagers expected to benefit more through individual and group income generating projects But many said not all applications were honored and not all promises by program officers were kept Rarely did program officers or extension staff travel to consult with people who were directly affected by project goals Their suspicions of conservation and all it entailed remained high largely because they did not clearly understand the dynamic evolution of its management and purpose Also, some of the reputations of its administration had been tarnished. Even though many of these people had been rotated out of administrative positions suspicions were high among the villagers for any number of reasons mainly focusing around the obvious divergent agenda of several project administrators with conflicting decisions and goals concerning resettlement. There was also the concern that the project inspired many in their quest for self-enrichment, creating new bureaucratic layers and corruption in new village level institutions that bridged the project to the rural beneficiaries This served to undermine and erode traditional authority and hierarchy

Besides unfulfilled promises and expectations, there were also the costs associated with the program. "It has long been understood that 'where the costs of establishing and running local wildlife management programs are greater, wildlife

conservation following [CWM] approach will appear less attractive'" (IIED1994 in Songorwa 1999) The costs included those usually associated with living adjacent to wildlife such as crop damage predation on livestock and people reduction in the work force in households communities falling under the control of outsiders reduced access to land and wildlife, and conflicts created within and among communities.

Scholars in institution building have often advised that outsiders involved in the process should not try to control but rather enable community development (Liebenberg and Grossman 1994 in Songorwa 1999) This was not the case for the Korup Support Zone To a large degree outsiders controlled community affairs in the absence of governmental involvement Expatriate program staff clearly established community policy that could be enforced with fines and jail time

The program also created conflicts within communities Examples included new territorial boundaries that needed to be established, sometimes arbitrarily Rural and largely illiterate communities were expected to initiate cumbersome community forestry applications to preserve their rights to resources Hunting regulations that prevented residents from other communities from accessing wildlife on lands owned by the former also resulted in misunderstandings and confusion In short, mostly it amounted to a lack of clear understanding of the goals and objectives of conservation and resettlement.

CHAPTER 5
COMMUNITIES OF KORUP

Introduction

Chapter five describes the villages and settlement issues of the KNP support zone. On a local level, this chapter identifies the people and places of the KNP within the South West Province of Cameroon, details the general differences among the various people their histories, ethnicities and the locations that were researched within the KNP. The information presented is part of the historical record for the region, and comes from a compilation of sources including personal communications from informants and traditional historians.

Review of Research Area Methodology

For this research sample surveys of households in six villages were administered over a 14-month period between November 1998 and April 2000. The six villages were chosen to represent the different categories of villages affected by the KNP project plan and to provide a representative demographic of the assorted tribes and clans in the area. The purpose was to gather individual and household level data on patterns of forest use, income levels, health and nutritional status of populations in the Korup National Park support zones.

Korup National Park

Human Population

The population of the Korup National Park support zone is estimated to be roughly 50 000 (Master Plan 2002). Mundemba and the adjacent plantation workers camps of

Palmol Ndian Estate are by far the largest concentrations of population in the Korup area and have long been recognized as a potential threat to the southern park sector [24] Most of the remaining settlements within the Korup area are remote and inaccessible and consequently tend to be relatively small in size and population (less than 200 people) largely because of poor market and road access

Rates of rural migration tend to be high and mostly in the direction of larger towns such as Mundemba, Kumba, and Calabar for those looking for jobs For those looking to establish farms the Kumba Mamfe road and the Kumba corridor are other migratory locations (Malleson 2000) In recent years a general decline in the Cameroonian cocoa and coffee markets has been a motivating catalyst for the rural exodus of many young and middle-aged men who seek jobs in plantations and urban areas. However, a declining job market in Cameroon, has forced these men to return to their former villages where many now earn a living based on hunting and trapping.

Cultural Groups

The Korup Park Zone contains a diverse range of ethnic groups that include the Balong Bassosso Korup Oroko, Mbo, Upper Bayang, and some scattered Fulnide and Hausa. While there are some strong cultural and historic similarities among these groups there are also some sharp distinctions (See Appendix H & I)

Separating the two non-Bantu tribes (Korup and Ejagham) from the remaining Bantu origin tribes (Oroko Balong, Bassossa, Upper Bayang, and Mbo) is the Akpa River Of the six tribal groups the Oroko occupy the most area The Oroko ethnic groups are comprised of six sub-groups These are Bakoko Balondo-Darko Balue

[24] Palmol workers are mainly comprised of people from Bamenda and other parts of Cameroon

Batanga, Bima, and Ngolo With the exception of the Bakoko tribe, which is confined to the northern village region of the Korup National Park (Esukutan Ikenge and Bera) all other villages that belong to the Oroko ethnic group are concentrated in the middle of the Korup area. The smallest of the ethnic groups the Korup, is mainly concentrated in the southern portion of the Korup area. The much larger Ejagham ethnic group is found in the northwestern corner of the park. The remaining ethnic groups – Bassossi Balong Mbo and Upper Bayang – are all found in the northeastern areas of the park

The Korup people bound to this area by the Mann River have linguistic and cultural similarities with both the Ejagham peoples to the north and the Ibibio people to the west (mainly in Nigeria) The Korup ethnic group is found on both sides of the international boundary separating Cameroon from Nigeria. Consequently Korup groups maintain strong economic and social ties with their neighbors in Nigeria, and, despite recurrent episodes of hostilities between Cameroon and Nigeria, trade relations were still quite strong across this border

Although linguistically different Korup and Oroko speaking groups do have similar social structures and village institutions The lingua franca in the Korup area is Pidgin English which is spoken universally in Cameroon

Regional Location and Access

The Korup area covers six sub-divisions inside three main divisions Many of the villages of this study fall within the sub-division of Mundemba, of which Mundemba Town is the urban center Mundemba is the seat of administration for Ndian Division of Cameroon s South West Province. Mundemba Town is also the main headquarters for the Korup Project

Mundemba is about 57 5 kilometers north of Ekono Titi 65 kilometers south of Calabar (Nigeria), 117 kilometers west of Kumba and about 200 kilometers north of Douala (See map of Cameroon in Appendix D) The research station is located in Mundemba, essentially at the end of the northern road Mundemba has a seasonal airstrip but most of its traffic comes by road via Kumba The journey from Kumba, where the pavement ends, to Mundemba is unreliable and seasonally inaccessible

From the urban hub of Kumba the road winds north through the relatively populated rural agricultural regions into Ekundu titi [25] A rural hub for Nigerian commerce and palm oil refining it is a moderately populated coastal frontier town and the administrative headquarters for the Palmol Plantations palm refineries Ekundu titi is also known for its large beach side market that traffics mainly in Nigerian goods illegal immigrants and as a distribution center for bushmeat extracted from the Ndian Division Before the completion of the road to Mundemba in the mid 1990s travelers who made it to Ekundu titi and wanted to continue to Mundemba would either hike the remaining thirty kilometers, or occasionally use boats belonging to the Palmol plantation are available for transport to Bulu beach in the Ndian Division, a ten kilometer hike from Mundemba. Travelers also could go to Calabar, or any of the Cameroonian coastal towns north of Douala, including Limbe Before the road was completed to Mundemba in 1996 anyone tourist or researcher wishing to go to Korup had to get permission from Palmol and the Government of Cameroon to charter a boat to Ekundu-titi

Most international maps designate the road from Ekundu titi to Mundemba as a paved national highway However the road, originally constructed in 1996 remains

[25] Ekundu titi is translated as "Little World

today a neglected dirt road The Government of Cameroon had slated the road to be reconstructed several times over the last few years Over the years contractors received credit for building a paved road from Kumba to Mundemba However due to a variety of reasons, only 1 5 kilometers of the road has actually been paved This small portion has been showcased repeatedly as representative of the condition of the road to the rest of Cameroon nevertheless the greater part of the road is still unpaved, and at times impassable even with a four wheel drive vehicle

Access directly into the Korup Support Zone was relatively improved once the 44-kilometer road linking Mundemba to Toko was completed in 1997 With assistance from the European Community (EC), WWF and United States Department of Defense (DOD), eight major bridges, including Manyu, Mana and Ostmyib and many more culverts were also built as a means of controlling the periodic flash floods and mud flows that erode the road. This new infrastructure is hailed a significant improvement to the area stimulating the movement of market goods and migration, and ensuring the safety of local inhabitants in travels both to and from Mundemba. Prior to these improvements there were several deaths each year as a result of local inhabitants attempting to cross these rivers Currents were so severe that occasionally four wheel drive vehicles would be swept away

Logging companies have also built a number of poorly constructed roads Many of these improvements have been short lived, however as these roads have quickly degraded into neglected tracks in the mud Several projects were organized to maintain the rural infrastructure by local rural councils and tribal associations But these efforts are at best a small bandage on a large degrading infrastructure

Climate

The climate of the Ndian Division is humid and tropical in nature There are two somewhat distinguishable seasons – the dry season and rainy season Annual rainfall is extremely high reputed to be the second or third wettest place on earth, with an annual rainfall in excess of 10 000 mm The months of December to February are the driest while June to October are the wettest. The average daily rainfall is 86 millimeters the average maximum temperature is 32° Celsius and the minimum daily is 22° Celsius Accordingly the nearby coastal region is also one of the least sunny spots in the tropics During the rainy season the sun is largely obscured by a thick belt of wet monsoonal air and by dust laden Harmattan winds that extend down from the Sahara during the dry season

Humidity also is relatively high for Cameroon showing little annual diurnal variation While there are no accurate data for Korup Park specifically data for the coastal region nearby indicates that the mean annual relative humidity is 83 percent and the mean daily maximum/minimum is 98 percent/66 percent Highest relative humidity values were recorded in the wettest months of July August and September High humidity approaching 100 percent, tends to occur during the night with lower temperatures As the air becomes hotter during the day the humidity falls

Soils, Vegetation and Wildlife

The Ndian Division is rich in diversity with soils ranging from fertile to sandy sedimentary sand loam and loamy and clayish soils It supports most subsistence agricultural production which is the main activity of the various people living in the area Most of the soils in this area are not very good for intensive agriculture They are generally sandy with very little humus. This makes the soil loose and susceptible to gully

erosion However, the upper Ngolo area is loamy and can support a wider variation of crops In general the soils of the Korup tend to be extremely sandy low in nutrients, and have poor water retaining capabilities They are commonly very acidic and infertile with low levels of soil nutrients and organic matter

Typical land use in the Ngolo Batanga, and Bima areas is a landscape pattern that has unique indigenous organizational foundations The immediate periphery of the typical village is usually reserved for unrestrained grazing This generally encompasses about a 3 km fringe of the village Most people have a small, live fenced garden directly behind their clay thatch hut farming is strictly outside the grazing area, next to the pastureland This area is considered a transitional zone. The majority of subsistence farm areas are found just beyond that zone (Figure 3)

The amount of farmland each family has is generically determined by three factors The first factor is the size of the population that is involved in farming in the village The second factor is the size of family involved in farming that particular piece of land, and its use historically The third factor is determined by the chief of the village in coordination with the villagers in establishing the best use of the piece of land in question For a time, local inhabitants generally used as much land as they could clear This practice has been somewhat curtailed by increased conservation efforts and restrictions imposed by government agencies administering to the area.

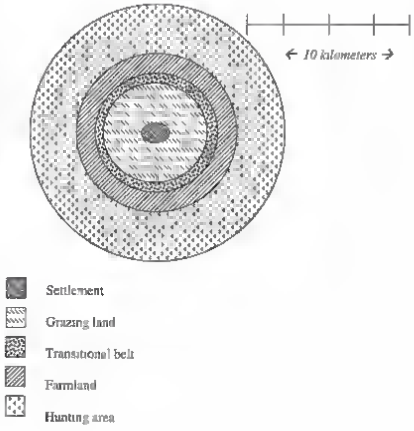

Figure 3 Typical Support Zone Village Settlement Pattern In Korup Forest 1988

The Research Area

The research area for this study lies in and around the Korup National Park. Most of the Korup Park region is found in the Ndian Division of the South West Province bounded to the south by the Atlantic Ocean, to the east by the Meme division and to the west by Nigeria, where Cameroonian special forces have been fighting a drawn out covert war for several years over the ownership of the oil rich Bakassi peninsula. The administrative center for the Ndian Division and the Korup National Park is in Mundemba.

The Ndian Division has a population density of about 17 persons per km^2. The population is not evenly dispersed throughout the division but rather in pockets diffusing out from the urban centers of Mundemba, Lipenja, Ndian and Toko. The coastal sub divisions have higher densities of people than the hinterland of the Muodemba subdivision, where densities occur at one person per km^2. The urban to rural ratio for Mundemba is 30 percent to 70 percent (WWF 1989, 1998)

Soils

An analysis of the area conducted by the World Wildlife Fund for Nature in 1989 estimated that about 20 percent of the Ndian Division is covered with mangrove swamp. The rest is covered with dense lowland evergreen forest dominated by the family Caesalpiniaceae (WWF 1989, 1998). The western sections of this forest, probably due to its isolation and because of the granitic acid soils which are unsuitable for agriculture have remained in a largely untouched state. The forest in the eastern part of the division rooted in soils of volcanic origin is much more attractive to farmers and has as a result been subject to clearing for farming. However, because of the forest's relative isolation

and its climatic history, the western region of the division fortunately has many endemic plant species remaining intact (Gartland 1985)

The Korup National Park area has no mineral resources or petroleum, and it is unlikely to produce any precious metals. Little research has been done on the soils of the area, although the nature of the soils can be largely determined from the underlying rock. According to Gartland (1985) and, Hawkins and Brunt (1965), four main soil types have been identified.

1 Soils located mainly in the southern section of the region (6 000 ha or four percent of the park) are composed of older sedentary elements formed by Cretaceous sandstone and non volcanic coastal plane soils. These soils tend to be very sandy and strongly acidic, possess poor water retention capacity and are generally low in nutrients. Although these soils can support some food crops, both palm and coconut farmers tend to avoid these soils unless there is no alternative.

2 Along the northeastern boundary of the region, soils are of older sedimentary composition covering about 9000 ha (7 percent of the park). These soils are derived from *in situ* degradation of sedimentary rocks of tertiary origins. They are acidic and low in nutrients and tend to be avoided by farmers.

3 In the extreme north corner of the region, old volcanic soils cover approximately 7 000 ha (5 percent of the park). These rich dark brown soils are composed of the underlying basalt and anesite. Extremely fertile, these soils are heavily farmed for cocoa and coffee, as well as for food crops.

4 The rest of the Korup region (104 000 ha or 85 percent of the area) is covered by soils derived from the *in situ* degradation of Precambrian basement rocks.[26] These types of soils are very gritty and coarse-grained, very strongly acidic and possess low nutrient status. They have poor water retention capacities. They are unsuitable for either plantation agriculture or subsistence agriculture and are generally avoided by farmers.

Fauna

Rainforest fauna in Korup National Park are exceedingly complex and diverse. Animals exist within a habitat mosaic, each patch of which is occupied by a somewhat different army of organisms, some transient and some resident (Johns 1992 in Whitmore

and Sayer 1992) Diamond and Hamilton (1980) have estimated that the number of passerine bird species within Korup alone is about 143 some 49 percent of Africa's total number of passerines. Passerines, or perching birds, are considered the most highly evolved of the bird species They are distinguished by their ability to form complex songs A total of 129 passerine species (90 percent of the total possible) have been observed in the divisions near Korup Park This forest is extremely important for birds (Diamond and Hamilton 1980)

The western forests of the Ndian Division are also extremely important as far as primates are concerned. Africa has some sixty three species belonging to seventeen different genera. Cameroon has twenty nine species almost half of Africa's total The Korup Park has about fifteen species or about 25 percent of Africa's total Korup is a key area as far as primate conservation is concerned. The total number of large mammal species in Korup is approximately fifty-two, belonging to twenty families and includes animals such as the endemic water-shrew, *Potamogalidae*; the endemic and endangered drill *Mandrillus leucephaeus* Preuss red colobus monkey *Colobus preussi* the chimpanzee *Pan troglodytes* the golden cat, *Felis aurata*, the forest leopard, *Panthera pardus*; the forest elephant *Loxodonta africana cyclotis*; the water-chevrotain *Hymoschus aquaticus* and the forest buffalo *Syncerus caffer nanus*

Flora

More than 620 species of trees and shrub have been recorded growing from the sandy nutrient poor soils of the Southern Korup Park almost 30 percent endemic, and at least 480 species of herbs and climbers (Master Plan 2002) The largest of the trees are up

[26] Components are granites gneisses, schists, embrechites and eetinites

to fifty five meters tall usually with an enormous crown spreading thirty meters wide in diameter Below the emerging cover is a more or less continuous and uneven secondary canopy at about fifteen to twenty-five meters composed of many varieties of tree species, predominately Annonaceae Euphorbiaceae, Leguminosae Olacan Scytopetalaceae and Verbebaceae (Thomas 1986) Beneath this secondary canopy is the forest under story, composed of small trees treelets and herbs.

Tribal Divisions

The villages of the park belong to three tribes the Korup, the Bakoko, and the Batanga. Other tribes in the immediate vicinity of the park are the Bima, Bakundu, Upper Balong Balende Badiko, and the Epagham The latter are a large and extensive group that occupies much of the Manyn Division and some territory of Eastern Nigeria (Devitt 1988)

The border between Cameroon and Nigeria not only divides the Korup Park regionally but it also attempts to divide the Korup people territorially but with little real significance socially or economically People of this region enjoy unrestrained and surreptitious trade between the two countries even during the episodic occurrences of regional conflict between Nigeria and Cameroon Due to Nigeria s proximity many people of the Korup and Oroko tribes make frequent use of Nigeria s social services and higher educational facilities. In fact, many people living in and around the Korup National Park region believe Nigeria to be more economically affordable physically accessible and culturally similar This is due in part to three factors

- because of their inaccessibility to Cameroonian markets the residents of many Korup tribal villages including Erati Akpasang Ekon I and other villages close to the Nigerian border inevitably turn toward Nigeria for many of their economic interests

- young people tend to go to Nigeria for higher education,
- the Korup development committee which looks after the interests of the Korup tribe is based in Ekonanaku Nigeria, a two-hour walk from Erat.

Most of the Korup and some Oroko groups tend to trade their produce mainly with Nigeria, or trade in goods passing between Nigeria and Cameroon (Devitt 1986) Among the Korup people, the Nigerian Naira is frequently used as currency Among the Oroko a combination of the CFA and Naira is frequently used. Trade varies depending upon the strength of the Nigerian Naira against the CFA A weakening of the Naira strengthens the use of CFA The illicit bushmeat trade also seems especially sensitive to these currency fluctuations, with meat going to whichever country has the stronger currency (Devitt 1988)

Linguistically, historically, and culturally, the Korup people have close ties with the Ejagham Originating from the Bantus of Central Africa and immigrating into Cameroon about the 14th century, both of these tribes speak non-Bantu languages which suggests an entirely different origin than their Bantu-speaking neighbors in Cameroon (Devitt 1988, Inyang 1988) Despite their linguistic differences, there are strong similarities in the structure of their communities and their traditional institutions and secret societies

Although not one of the target villages used in this study, it is worth mentioning that the largest village in the park is Erat which was established during the lifetime of most of its residents Over 70 percent of the men moved to Erat from Ekon I a village located just outside the park Erat s contribution to the diminishing wildlife population is great, as it is a main hub for most of the bushmeat supply coming out of Korup heading

for Nigerian and Cameroonian markets. The majority of the recognized "big" hunters come from Erat.

The remaining villages directly in Korup Park have also been *in situ* for only about two or three generations, within the last century. Most of the villages have expressed an episodic desire to move closer to fertile soils and closer to the proposed road system. However, they wish to also be fully compensated for the move, allowed to hunt sustainably, and to harvest forest products.

The construction of roads has been a major incentive for villages inside the park and those in the immediate buffer zone to move or harvest on more fertile soils. This could give the residents a sustainable future and avoid the need to move every two or three generations in search of fertile grounds. Since its construction, however, only one village, Ekundu-kundu, has attempted to resettle, but only partially.[27] The road into the support zone is now a fixture of commercial and private transportation, but villages adjacent to the road are now being used as secondary stations for travelers from villages within the park, thereby increasing exports out of the park.

Study Villages

Within the park and its support zone, there are an estimated 172 villages for which the population recorded is approximately 23,830 (Butcher 1997). These villages fall under three divisions: Ndian, Meme, and Manyu, and then under six sub-divisions, Mundemba, Upper Banyang, Toko, Eyumojock, Nguti, and Konye. There are six main ethnic groups – the Banyang, Bassosso, Ejagham, Bima, Korup, and Upper Balong.

[27] Ekundu-kundu is translated as "our world." Most of the younger residents of the old Ekundu-kundu village have built new dwellings in the resettlement village; however the older residents have not made the permanent move to resettlement as of April 2000. It is expected that once they do move, their old village will be destroyed.

The study villages were chosen to represent the three major regions or categories of population and ethnic affiliations affected by the Korup forest management plan. Within this grouping the issue of accessibility during the rainy season was another factor in village choice. Within each of the three regions three villages were then chosen at random. Out of the nine villages that were originally chosen, six were retained for the basic household survey, with four of the six villages having complete one-year data sets.

Group One: The Oroko and Korup Villages

Within the Oroko segment there were approximately fifty villages considered varying from 30 to 500 people each; the majority of the population is composed of the Oroko-Bima linguistic group (Table 5-1). Broadly speaking these villages were located inside the support zone of the park's forest and had some of the poorest soils; with the least amount of NGO assistance of all the villages affiliated with the management plan. Although composed of various clans and ethnic affiliations, the main language these Oroko tribes speak is Oroko. Their second language, which is universally spoken, is Pidgin.

Table 5-1 Oroko Study villages in Korup Park Region 1999-2000

Villages	Dist to water	Class/ students	Road	Health post	Dist to market	Nearest market	NGO assistance	Distance to park	Tribal aff
Fabe	30 meters	2/20	Seasonal	Defunct	20 km	Mundemba	None	10 km	Oroko/ Bima
Meangwe 2	50 meters	3/125	Seasonal	In village	22 km	Mundemba	Community center	10 km	Oroko/ Korup
Nduan town	500 meters	6/150	River access	Paimol 5km	1 km	Bulu beach	None	2 km	Oroko

To date, only the Oroko have been host to any actual or projected resettlement schemes. Despite their proximity to the Korup groups, which number only about eight villages in total, these two tribal affiliations seem to be on relatively good relations and

even share some of the same natural resources. The Korup ethnic villages are more isolated in the forest, however, any contact they have with markets or other people in Cameroon tends to filter through the Oroko areas (Table 5-1).

According to the Oroko accounts, the Korup are fiercely reclusive and tend to affiliate more with Nigerians due to their proximity to the Nigerian/Cameroonian border. Korup people frequently use Nigerian services, markets and even Nigerian money. The Korup tribe maintains its own language derivation called Dorup. Most Korup understand Oroko Pidgin and Dorup, but most Oroko understand only Oroko and Pidgin.

Table 5-2. Korup Study Villages in Korup Park Region 1999-2000

Villages	Water Source	Dist. to water	Class/ students	Road	Health post	Dist to Market	Nearest Market	NGO assistance	Distance to park	Tribal affl.
Erat	Stream	0	0/0	None	27 km Palmol	20 km	Idula beach	None	In park	Korup
Ekundu Kundu[28]	Well	Pipes	4/0	Yes	20 km	20 km	Mundemba	Resettlement	In park	Korup

In 1999, the Korup Project finally initiated the resettlement of Ekundu kundu. While in the park, the village had no potable water, health care facility, school, or road access. They did have a rudimentary class for primary school, however no qualified teacher was willing to stay there to teach.

The people of the Korup Park only have access to traditional healers. The closest medical facility is at the Palmol Plantation between twenty and twenty-seven kilometers away. Traditional healers generally suffice until the condition becomes too critical. At that point the sick are transported to a medical facility. Medical facilities are perceived as a place of last hope.

[28] Originally in Korup core forest, resettled to Oroko tribal area 1999-2000.

The trek to market for the Korup who live in the park can be up to 26 km. Many Korup go to the Nigerian markets to buy and sell their goods. Household goods are cheaper in Nigeria. For the most part, these groups feel more affiliated with Nigeria than with Cameroon.

The Korup live right in the core forest. All of their resource development and subsistence comes at the expense of the fragile biodiversity surrounding them. While in the forest, the Korup continue to introduce exotic food crops and engage in the hunting and trafficking of endangered wildlife. This is their main method of subsistence.

Because of the anticipated resettlement plan, Korup villages get a lot of assistance. Ekundu-kundu residents received training in construction and monthly cash allotments as an incentive for clearing new land to farm outside the park and for the cessation of hunting in the park. Korup villagers receive all the trappings that can be associated with a full-scale resettlement project – new brick homes, a road system, schools, access to potable water distribution system, and a town hall funded by the DOD. All these benefits are a considerable improvement over the conditions in which they lived prior to resettlement. Nonetheless, resettlement was not without some setbacks. The remaining five villages are still skeptical and suspicious about being told they need to leave their ancestral homes to move to a new territory, despite the inducements or reasons.

Group Two: The Oroko-Ngolo Villages

This group includes approximately twelve villages from the main Oroko ethnic group; however, they speak a different dialect of Oroko that is called Ngolo (Table 5.3). The Ngolo-Oroko reside a little further north. Their region has better soils and a slightly cooler climate due to the increased elevation. They are also a greater distance from the park. This allows them to have larger crop areas and a more diverse crops system.

Although the crop potential of this area is greater due to these villages greater distance from successful commercial markets they are limited in their options for fully exploiting the potential of their commercial crops

Table 5-3 Oroko-Ngolo Study Villages in Korup Park Region 1999-2000

Villages	Water Source	Dist to water	Class/ Students	Road	Health post	Dist to market	Nearest market	NGO assistance	Distance to Park	Tribal affi
Mmaguve I	Spring	100 meters	7/340	Seasonal	7 km	28 km	Mundemba	None	15 km	Oroko/ Ngolo
Toko	Spring	300 meters	3/300	Seasonal	7 km	28 km	Mundemba	None	15 km	Oroko/ Ngolo

Group Three: The Ejagham Group

This group includes approximately twenty villages from the Ejagham ethnic group They are at the far northeastern section of the support zone surrounding the forest. In contrast to groups one and two the topography is very hilly and somewhat cooler Although hunting is important, villages here are more distant from the core forest. There is also better access to roads leading to larger markets in both Nguti and Kumba (Table 5 4)

Because of the accessibility afforded by a better road system the development of commercial hunting for sale in urban Cameroonian and Nigerian centers has accelerated in this area. Easier access to markets has facilitated commercial loggers who export timber as well Commercial loggers have had a historical record of development in this region Although it is now an illegal activity just as hunting is for commercial purposes many logging trucks can be found in this region without much regulation or law enforcement

Table 5-4 Eyagham Study Villages in Korup Park Region 1999 2000

Villages	Water Source	Dist to water	Class/ students	Road	Health post	Dist to market	Nearest market	NGO assistance	Distance to Park	Tribal affl
Abat	Spring	400 meters	7/150	Seasonal	In village	In town	In town	None	20 km	Eyagham
Mghagat	Source	500 meters	0/0	Seasonal	3 km	3 km	Abat	None	20 km	Eyagham

Most of the villages in this region had been relatively isolated until the Korup Project initiated its charter to preserve the park's biodiversity in about 1986. At that point, the infrastructure was laid out to make social and physical connections to villages in the park and the support zone. This proposed infrastructure included a system of road networks, health posts, schools, and various development projects. Plans were also initiated to resettle six villages from the core forest.

Table 5.5 Population Growth Around Korup

Population Growth	1972	1976	1983	1988	1998
Mundemba		5219		6628	
Ekundu Kundu				92	253
Erat	187	480		278	
Fabe				109	175
Toko					350
Abat					620
Mghagat					450
Meangwe 1					246
Meangwe 2					500

History

The following sections outline historical accounts of the origins and motivation for several of the main migrations to the region. These accounts are based on oral history, narrations of legends recounted by various village elders, and archived reports.

Origins of the Oroko Speaking Peoples

The Batanga, Bima, and Ngolo are all linguistically Oroko and are descended from a single group of people whose origins are said to be from the Congo Basin (the former Zaïre) Their language, Oroko has been linked to Lingala – another Bantu language widely spoken in the Congo Basin (Peter 1988)

The Oroko speculate that sometime in the 16th century the exact date and for reasons unknown their ancestors left the Congo Basin Their original people sailed north via the Atlantic Ocean and then west to the lower Niger The Oroko believe that the powerful Benin and Oyo people of the delta states had then stopped their ancestors from continuing–They then migrated east to an area between Rio Del Rey and the western slope of Mount Cameroon These original Oroko settled in and around the coastal area of what is today considered the Ndian Division (See Appendix E)

According to Oroko legend at this time all the various main descent lines known today had been formed [29] Peter (1988) remarks that, among all the groups the Bima strongly believe that there is a common ancestry between the Ngoe and Bakundu tribes of the present day adjacent Division of Meme However the Batanga say that they are from another group entirely the Bokaba and that the Ngolo are really of two groups the Bokwocho and the Bokossa Nevertheless, the main Oroko groups–the Batanga, the Bima and the Ngolo were all originally one linguistic group Their appellations movements and present locations were a matter of migratory movements triggered by either the search for fertile arable land or hunting grounds or due to recurrent wars (Peter 1988)

[29] The Batanga, Bahue Bulondo, Bima, Ngolo, etc –

The Ngolo

According to Peter (1988) the first Ngolo Otoko to the area had settled on the banks of the river Rio del Rey [30] Village legend has it that early in their arrival a Portuguese trader sailed into the Ndian River and parked his boat along the banks of an Ngolo village The Ngolo had been celebrating an annual festival when the peculiar European emerged from the river More concerned with their festival and not understanding what this strange white man was or wanted, the Ngolo concluded that he must be a ghost and promptly killed him (Peter 1988) They cut off his head and right arm and then threw the corpse into the river After a few days the corpse was returned to their village apparently by the tides The Ngolo chief at the time, Naroboka, called a village meeting to determine the meaning of this sign and to decide what to do to save the tribe from imminent danger Addressing the tribe Naroboka stated

> My people you were all present when a few days ago a devil invaded us while feasting Things of this nature are a sign or bad omen You all know that the annual festival reminds us of our forefathers. It would be a shame if they were alive to see a ghost amidst us The only thing left for us at that time was to put a stop to its life and hand the corpse to the fishes of the waters, and this is what we rightfully did But instead of the fishes feeding on the corpse, they have returned it to us to indicate for the brothers where he was killed. We should prepare for an attack on us. The final victory depends on God.
>
> Peter 1988

After a few weeks, more Portuguese sailors launched an attack on the Ngolo people in retaliation for the murder of their sailor This war with the Portuguese split the Ngolo people into three groups One group apparently migrated to Calabar in present day Nigeria another group migrated to Obenikang and the third sailed up the Ndian River and took refuge in the dense forest of present day Korup. This group followed the same

path the Batanga Oroko had taken earlier. The Ngolo, who consider themselves warriors, fought those they encountered all along the way. They apparently destroyed the Barombi Kingdom and split up the region, establishing settlements along all the tributaries of the Mmaya River in what is Cameroon's Southwest Division. Naroboka, a descendent of the original Naroboka, founded Meangwe, not far from present day Meangwe I. Other Ngolo groups pushed further east into Barombi territory to the Madie River. They are referred to by the Ngolo as the Ekama (Upper Ngolo). Eventually the chief of the Barombi, Bokossa, had to surrender and accept the transition to become an Ngolo. The remnants of these Barombi are still found in the three villages of Ikoi, Illondo, and Kilekile. Referred to as the Ngolo Kossa, they are revered as being original people and command respect in tribal decisions concerning all Oroko in the region.

In the late 19th and early 20th century the Ngolo people became more interested in commercial agriculture. This new outlook was quite unlike their tribal brothers, the Batanga and Bima peoples, who were more interested in hunting. For this reason, many of the Ngolo migrated to the fertile territories of the western Meme Division and the Mnyuka sub-division, some 60 to 100 kilometers away. Here many Ngolo bought farmland or worked as sharecroppers. They started to form a significant Oroko diaspora, and many still migrate there for better farming. They populate a considerable proportion of many villages in these divisions. Nonetheless, many of these Ngolo still respect Meangwe as their ancestral home and celebrate important customary meetings and ceremonies as symbols of their unity with all the Ngolo.

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[20] This site is now occupied by the Isangele people.

The Batanga and Bima

Before the Ngolo the Batanga were the first to forge up the Ndian River in their search of better hunting areas. This migration from Cameroon's coast brought them directly into the dense forest of what is now the Korup National Park and its support zone. Since their arrival in the early 16th and 17th centuries, few have migrated out for commercial crop production. Their most important villages are the ancient settlements of Dibonda, Ndoyi and Lipesja.

The Bima were the last of the Oroko to arrive in the Ndian Division. They trace their descent from the original founder Ngoe, whom the Oroko believe gave birth to the founders of the Bakundu, the Bakossi, the Bassosi, the Mbo and the other original Oroko groups. They refer to their founding father as Nwima and to his children as Bo nma (Peter 1988).

According to Peter (1988) there were two streams of migration. The first occurred when some Bima migrated west with their sister tribe the Bakundu. This first group settled in an area where the Bakundu had lived, the ancient site of Beboka, close to present day Beboka.[31] From here they spread further west and founded the other villages in the area including Mokango, Esoki, Ngeme, and Mofako.

A second wave of migration is believed to have occurred by sea from Ngoe's old kingdom to the Manegube-Kupe mountain area. Forging up the Moku River, this group founded the villages of Ndian, Ikassa, Mundemba, Ituku, and Fabe. In recent years, other Bima and non-Bima have migrated to this area, increasing its population tremendously, especially in Mundemba.

[31] Translation: Beboka in Oroko is "old site."

Origins of Ndian

Elder Orokos recount that originally no man had the right to kill and eat fowl alone, and women could never eat chicken or its eggs. In many villages this tradition still endures, especially among the members of the secret societies, where women consider eggs a taboo, which if eaten may cause their offspring to be morally corrupt.

According to Peter (1988) and Oroko accounts the origins of Ndian stem from this taboo. Village elders describe an important incident that took place long ago where an Ngolo Bweme native named Nambangi killed and ate a chicken alone. Soon his fellow villagers discovered him. Alarms were sounded throughout the village. Neighbors rushed into his house and accosted him. His neighbors decided that he was to be tried in the dark forest of Nyanoh for violating this old important custom. Nambangi understanding the seriousness of his situation, managed to escape into the bush. After wandering for several weeks in the dense forest, he settled in a cave at the mouth of the Mana River. To survive he mainly hunted animals but soon discovered the farms of Bundo-Kundo, a nearby village belonging to the Korup people, a tribe he did not know. He occasionally stole food from these farms but kept himself hidden in the cave. It was said over time Nambangi however, became comfortable and carelessly threw his cocoyam and plantain peelings into the Mana River where they would float down to an estuary used by fishermen from Calabar. The floating refuse puzzled these fishermen as they had no idea who could be living up river in the dense bush. Nothing had ever floated down before. One day one of the fishermen from Calabar went up river to see who could be living on the upper banks of the Mana River. Traveling up river by canoe, he soon saw smoke coming from Nambangi s cave. He left his canoe at the riverbank and walked toward the

cave Nambangi saw this stranger and, fearing he may be one of his fellow tribesmen coming to take him back he picked up his gun with the intention to shoot the intruder Nambangi realized this was a Calabarian and lowered his gun The two soon became friends and the Calabarian decided to stay and never go back to Calabar The two men then chose to call their new home, Ndwian, which is a combination of the languages of the two men *NDI* in Calabar means "should I stay?" And *WAN* means "here" From then on the place became known as Ndiwan However, during the German occupation of the area, the W was dropped and it became *NDIAN* The two men mainly traded with the coastal people of the north the Ijaw and the Ibibio, and not for many years did Nambangi go back to Ngolo Bweme

When he finally did return decades later his old neighbors still wanted to try him for his crime of eating the fowl alone But Nambangi begged for their forgiveness and offered to give them some of the strange new discoveries he brought from the northern coast He introduced his old neighbors to new goods such tobacco salt, and new clothes The village pardoned him and Nambangi took several of his tribesmen on a few lucrative trips to Calabar a new land. Soon after his tribesmen spread further out into new settlements along this new route in an attempt to develop more trade with the various other tribes

Occupation of Ndian by the Germans

By the early twentieth century the Ndian region was under the territorial control of the Batanga, the Bima, and the Ngolo peoples. At this time the colonial German government began to extend its influence out of Douala and Kumba and up along the coast to Ndian German colonial administrators signed treaties that offered gifts of salt,

tobacco and alcohol in exchange for alliances and plantation rights. Nambagi, the ex outcast of the Ngolo tribe, represented the Ngolo people and the town of Ikoti during their negotiations with the Germans. According to Peter (1988), by 1908 the King of Ikoti, a man named Nangia, signed a treaty with the Germans, who then issued him an imperial flag and a certificate of recognition declaring all the Ngolo and the town of Ikoti to be a German Crown possession and protectorate.[32] The majority of the Ngolo people did not approve of Nangia's association with the Germans, or the idea that he had let Nambagi, who had once been ousted from the village, lead these negotiations.

Another Ngolo from the same village, Nakeli, who later became the Chief of Ikoi, objected to the German acquisition. Nakeli, apparently a giant man, had a reputation for ability and strength, and he also hated the Germans and Nambagi for dealing with them. He denounced the King of the Ngolo, his right to chieftaincy, and the Nambagi-German treaty that the King had approved. With the backing of the village he ascended to the throne and then attempted to gather further support from neighboring villages, convincing them to reject all present and future German-Ngolo treaties (Peter 1988).[33]

In spite of this, Nangia had strengthened his associations with the Germans and reported Nakeli as a threat to the German treaty. What followed were a series of wars between the Germans and Nakeli's forces. Referring to them as "Nakeli's Wars," Bila ba Nakeli, village historians recount the wars as if they had just concluded.

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[32] Nangia was the first King to be recognized by the Germans. The date was January 25th, 1909.

[33] The treaty issued by the Germans incorporated Ikoti as a protectorate and ordered them to sell provisions to all expeditions, and refer to the Europeans for all their internal disputes and problems. Also any passing indigenous expeditions and traders are obligated to pay taxes.

Nakeli is recounted as a hero and he is said to have supernatural powers that he bestowed on his five man force to battle the Germans. Considering them an occupational power, this rebel group resisted German colonial ambitions by attacking and periodically killing all trading parties associated with the nearby German plantation. The German regional governor soon dispatched soldiers to track Nakeli and his forces down. Not faring well in the war with the Germans, Nakeli soon lost some of his men. He then went into hiding while German soldiers raided his ancestral village of Ikoi, killing villagers indiscriminately. The killing went on for a period of time and soon Nakeli's family pleaded with him to surrender to save the village. To escape the violence caused by this war, many people had migrated out of the area and started new settlements that form the diffusion of Ngolo settlements throughout the Korup Support Zone. Nakeli agreed to come out of hiding, but German attempts to kill him at Ikoi were unsuccessful. The Germans arrested him and brought him to their regional capital at Buea for trial. He was tried, sentenced to death, and then taken to the port town of Victoria for execution.[34]

Village historians recount that he was considered "bulletproof." The Germans decided to tie a large stone to his neck and then throw him into the sea. Soon after the execution, the Germans left the beach and saw that Nakeli had somehow escaped and was now walking ahead of them. The Germans arrested him once again, and locked him up. While awaiting another trial in Victoria, Nakeli prophesied that if he died in a Victoria jail, instead of on Ngolo land, that maggots would attack every living white man there. The Germans apparently took this to heart and escorted him back to Ngolo land where he apparently escaped and hid out in one of the newer settlements.

[34] Now known as Limbe.

With the loss of Nakeh s forces life in the territory was calm for several years until the raids were once again resumed Local lore recounts that this time a close friend of Nakeh, a man from one of the neighboring Bukundu villages sold Nakeh s location and his secret to immortality to the Germans With this information, the Germans sent another large force, this time from Kumba, to Ngolo territory to find Nakeh Along the road to Ngolo near Konye, the Germans met up with the villagers at their Etana as they were celebrating an annual festival [35] According to Peter (1988), the Germans thought these people were Ngolo and that these villagers were gathering to fight them, so they opened fire and killed many of the inhabitants The Germans arrested a woman from the village who later informed them that they were not Ngolo, but Bukundu However, from that point on the Germans killed indiscriminately all the way up to Ngolo land News of the German force soon reached the Ngolo chiefs All the men were sent to hide in the caves and advised to only cook at night Despite these precautions, the Germans shot many Ngolo men on sight So many men were killed that the Ngolo population was being severely affected (Peter 1988)

Nakeh soon decided to surrender, but told his son that if he was shot by the Germans and did not urinate then he was still alive Since the Germans knew Nakeh s secret and his location, they were able to catch him. They hung him and shot off his legs Nakeh apparently urinated and then died Nakeh is buried at Ikot where he is a celebrated hero and remembered by an annual festival After Nakeh s death the Germans set up an administrative research station in the heart of Ngolo territory at Toko to demonstrate their continuing occupation and quell any future uprisings (Peter 1988)

[35] The Etana is the villages main ceremonial juju house In Pidgin it is referred to as the

The land that the Germans once occupied still remains deserted, as forest growth reclaims the last remnants for itself. Still expecting the Germans to return one day, no one dares go into the area. The land is always pointed out to visitors and carefully remembered for its historical significance.

Missionaries in Ndian

By the 18th century Catholic missionaries had landed in western coastal Oroko areas. These missionaries, mainly Catholic, set up churches and schools and then attempted to drive their way further inland into Bima territory. Due to its inaccessibility, Ndian was one of the last areas of Cameroon to be reached by these missionaries. Any effort to entrench themselves in this territory met with failure. This failure was due primarily to two reasons:

- The forest was extremely dense and heavily populated with wild animals. This made logistical support and communication extremely difficult.
- The indigenous Oroko and Korup groups were heavily into their animist *juju* societies, which they believed held their world together. They objected to what the missionaries had to offer, especially to the idea of forced monogamy and the excise of their fetish societies. While some Oroko did believe in the existence of one supreme God, their conviction to fetish worship, polygamy, and the belief in minor Gods inhibited any conversions to Christianity, and still do.

Local villagers either dismantled the makeshift churches constructed by the missionaries, or chased away any preachers who ventured into their territory. By the 1960s the Presbyterian Church started using locally trained preachers and sent them into the area. Placing their resources mainly in administrative centers like Toko, Lipenja and Mundemba, rather than smaller remote locations, increased their conversion rates. However, many of the Bima's traditional animist beliefs still remain intact. Christianity

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P'alaba: house and is usually in the traditional middle of the village.

and the belief in a supreme being have made some headway but for the most part traditional juju societies and fetish or idol worship are more revered

Juju Societies of Ndian

Prior to German colonial occupation, the Oroko of Ndian maintained a system of political organizations controlled by their traditional juju societies. Early in their arrival, the various Oroko settlements did not have one main chief. Rather, the members of the various societies took roles in administering all aspects of village policy.

Members of the juju societies are divided into age groups and then into descent lines and each division administers to some aspect of village policy that affects the day-to-day affairs of inhabitants. Representatives or leaders of the various juju houses periodically take their place as administrator of the Etana house where they play a role similar to that of a minister or judge within the village. Leaders of these juju societies were basically the first civil and criminal court in the area until the Germans set up district courts. And even then, when the Germans set up a customary court in Toko, the judges were chosen from a cross section of villages within the area. These judges all belonged to a juju society (Peter 1988).

By the 19th century most villages had adopted a new administrative component. Chiefs and village heads were chosen in all the Oroko settlements. The chief represented the village in all external affairs and village politics and the village head was chosen from among the elders as the top authority on cultural affairs. These chiefs were mainly voted in but some had hereditary positions and recently district officers of the government have begun to install others. Some chiefs get remuneration from district officers or the village while some simply get access to more land, or hunting privileges

Belonging to a juju society offers privileges and honor but demands sacrifice It is also understood to be a sign of popularity and wealth Many inhabitants belong to at least one basic society but to belong to any more specialized groups or several groups at a time would demand greater wealth or ability To belong to many groups ensures a large funeral full of entertainment and feasting This benefit alone is one of the key considerations many have when joining several groups at a time as all the members of the group must participate in the funeral ceremony

All aspects of the society are kept in strict secrecy There are the usual components of secret greetings and specialty foods, but the most important aspect is the particular appreciation the Oroko have for their colorful traditional masked dances

Significant Juju Dances

Juju societies have various functions some are for entertainment some for healing, religious or cultural exercise, and others are for competition. Furthermore, some of these dances are secret in their intent but public in performance while others are performed simply for entertainment value Generally they are divided between men's or women's groups, however that does not exclude particular men from being specifically chosen at birth to be accepted in a particular secret women's group, such as the Disongo women's group In this case, a chosen man may take on all the spiritual manifestations of a woman in that society

Many jujus can express themselves without secrecy through dance Without any preparation, they simply appear and dance in appreciation of some event typically a birth, a healing or the welcoming of an important guest This type of juju dance can happen sporadically and in various locations and not strictly at the Etana house These

jujus are referred to as the Dinwangi and they signify the arrival of peace happiness and fertility to all Oreko

There are also several dances that use intricate secretive masquerade sequences. These are usually held to honor the death of one of the house members, or as competitive events with other members of the society in the neighboring villages While they are traditionally secretive dances, these events can be held in public and are generally performed in front of the Etana, the village ceremonial house

Most of these dances are characterized by processions of dancers appearing suddenly out of nowhere dancing or flying about to the beat of several traditional drummers These drummers are quite talented as they have a dedicated knowledge of the range of the juju s intricacies, and their local variations It can be a lucrative occupation that commands high fees and regional respect Dancers generally perform individually in front of a row of drummers to the beat of the specific event that is being celebrated. The dancer may signal a drummer with a secret cue that indicates a special rhythm needed during a movement of the song or sequence This is all a part of an orchestrated, methodically knit style that distinguishes each secret society's colorful masquerade and its significance to the event. The juju dances can be quite acrobatic improvised, and outrageous sometimes chasing down unsuspecting spectators with machetes or canes But all the while magically maintaining the beat of the rhythm set by the drummers as the masquerade fulfils the secret society's purpose

One of the leading dances performed by the men is referred to as the Mal'leh dance or the elephant dance It is a mystical and outrageous dance that uses colorful displays of real fire and waves of yellow palm fronds. The masquerade that performs in the Mal leh

group is called the Njoku. He represents the main character, the elusive bush elephant which is found in the adjacent rainforest. The members of the Mal'leh that support and perform this masquerade are part of one of the most powerful societies as they believe in their ability to spiritual transform into their totem. This spiritual transformation is illustrated by the dance sequences which show how the Njoku can increase or decrease its size from two feet to fifteen feet. This group's prowess is also demonstrated by their characteristic dance over a blazing fire, referred to as the Ebonde cha Mal'leh. To the echoing beat of the Oroko drummers the Mal'leh dance wildly through searing embers and fanned flames without any indication of getting burnt or hurt. The leader of the Mal'leh juju is called the M'bom. With his assistant, Esamba, they alone can prepare the ceremonial fire, and continually fan the flames with dried animal skins. The Mal'leh keep dancing until their steps extinguish all evidence of the remaining flames and coals.

The principal juju dance for Oroko women is referred to as the Disongo. The women dancers of the Disongo are captivating due to the contrasting colors exhibited in their masquerade. When in masquerade, members of this group cover their highly decorated bodies with only a loincloth, in either red or brown, and a band of white fabric, or a bra, which may be used to bind their chest. At times they also can be seen masquerading with just their loincloth. Dancers don a crown, bracelets, anklets and belts, all made of tightly woven raffia. They also may carry some sort of spear. All the dancers bodies are covered in a chalk-like mixture (referred to as penibe), which seemingly transforms their distinctive individual qualities into a harmonized ethereal and ghostly presence that can hover throughout the village. Leading this juju dance are the Iyamba

and Ngon Balaba. Although specifically a women a masquerade, particular men may be allowed to enter when chosen at birth

Traditional Healers

Highly important components of Ndian societies, and in some instances, a significant element of their secret societies are the traditional healers In contrast some traditional healers are also respected for their abilities that rest outside their affiliations to a secret society for example, Muslim healers who have emigrated south from Nigeria healers who have attended traditional instructional seminars held by renowned herbalists of the area, or renowned sorcerers known for their curative powers But by and large many of the traditional healers are affiliated to one or more secret societies and have an obligation to their village as a healer Most people even have a healer as part of their own household, because these skills are handed down through the generations to one chosen member

Due to their inaccessibility and isolation from most of Cameroon ,healers of this region had to depend on their own techniques and methods of experimentation for developing their highly adept skills at diagnosing and treating local ailments Dance, prayer dream analysis and traditional medicine are all elements of the healing process.

Most of their abilities as healers have developed through sharing of knowledge and successfully experimenting with herbs found in the forest. Typically, if someone became sick, and a particular herb or plant was used successfully, the procedure used to create the medicine would be taught to a chosen apprentice before the healer passed on It is also common for a healer to receive instructions from their ancestors through dreams or visions to prepare a specific medicine.

There is no doubt that curative herbs do exist in this region. The various western drug discovery programs that are continuously investigating this dense equatorial forest have already established this. These same multilateral development and research organizations aggressively push for advancements in modern medical facilities in the area, but at the same time almost exclusively focus on identifying the numerous plant species rather than recording the methods and inventory of the curative herbs already known to the traditional healers. What they fail to appreciate is that historical lack of modern health facilities has encouraged many of the traditional healers to excel as proficient health practitioners.

The continued existence of traditional institutions in Ndian must now be weighted against the benefits of modernization and the growth or future accessibility to the region. With the influx of multilateral development programs funding conservation at all costs, and some reckless privately funded, drug discovery programs that have learned to bypass organizational accountability, the people of Ndian are now experiencing a transformation that is eroding the very base of their own traditional methods of healthcare and drug discovery, consequently eliminating a key component, and important function, of their social institutions and traditional distinctions.

The Origins of The Korup

There are few, if any, written references concerning the history of the Korup people. Inyang (1988) offers a good preliminary source of information on the tribes of Korup, however their origins are obscured not only by history but by their own encouragement as well. In part due to illiteracy, but mainly due to efforts of the senior men within the Korup, chronicled accounts of the tribe are only conveyed exclusively to those of the tribe who will offer refreshments, food and gifts to the oral historians,

usually the aged men who have little else to do but rest by the traditional *Ekwe* house [36] As a result, much of their history is reserved and dependent on a payment arrangement, as the senior men try to eke out a meager living in their continued success as the storyteller In addition, even if an outsider is willing to pay for a chronicled account of the Korup history he is usually met with suspicion in the belief that he will somehow use the information to exploit them. As with many chronicled examples of oral history, there are some colorful deviations from the actual events described, but with the Korup omissions and exaggerations may be part of the process to keep the interested paying

With roots in Bantu culture, and originally from the Central African Republic the Korup people migrated north to the Bamenda grasslands of Cameroon about the 14th century Within a few years they moved several hundred kilometers further west to an area referred to as Kitok The Korup remained there for a long period of time. However, from about 1540 to 1600 the area then developed beyond the effective control of the Oban's (chief) administration and problems began to plague the community (Inyang 1987) King Nkemeng Obon realized his authority was supplanted by a growing opposition aware of his fear to pacify the open disruptions caused by several feuding families These feuds caused political instability and soon degenerated into bloody wars within the tribe that resulted in the expulsion of one of the tribe's feuding families the Oyoyong clan (Inyang 1988)

According to Inyang (1988) political stability was soon restored after the expulsion. A new chief Obon Ekpor Akwunge then ascended to the throne and ruled the people of Kitok. But there was still much bitterness among the tribe since the bloody war and

[36] The Ekwe house is the main ceremonial juju house at the spiritual center of each Korup

many of the inhabitants of Kitok migrated out to form new settlements, each with their own Oban in what is now the Korup Park. These new settlements comprise mainly all the present Korup tribe villages: Ekong, Anaku, Ekong I, Ikondo-Kondo, Abang, Okpokobeit, Okubor Nguru and Ngandap. These villages while all generally separate autonomous settlements, all respected, for the most part, a traditional hierarchy among the elders of all the villages.

By 1902, clashes between the Korup of Ekong Anaku and the neighboring Ejaghams became too tense. The chief of Ekong Anaku, Oban Inyang Eta, recommended that every Korup village mark their boundaries between it and any neighboring non-Korup village (Inyang 1988). This resulted in a war with the neighboring Ejaghams where Oban Inyang Eta was killed. This further escalated the conflict on both sides. Understanding the future consequences of the war, several clans from the Ejaghams came to Ekong to perform a masquerade and offer respect to losses on both sides of the conflict. The new chief of Ekong, Oban Obin Obin, first admonished them, then accepted their condolences and offered to end the bloody conflict (Inyang 1988).

Both groups marked their boundaries and signed a blood pact of peaceful coexistence to put an end to a conflict that had included the capture and sale of neighboring Ejagham men. Jujus were exchanged and borders were fixed to mark the territory of both groups. Many of the streams and rivers of the Korup territory were renamed to commemorate an incident or a peace ceremony between the two groups. In the areas where there were no natural boundaries, distinctive and resilient shrubs (Okono) were then planted (Inyang 1988).

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village. Ekwe also translates to tiger or leopard.

Korup First Contact

European contact to Korup came relatively late and was fortunately restrained Earliest reference to the area can be found in P A Talbot's narrative "In the Shadow of the Bush" (1912), relating his experiences as a district officer for the British Nigeria Company His main purpose was generally as an administrative and legal council in the Eastern Bnghan territory, held by the British He was issued the task of setting up rural native courts throughout the region, with the occasional inspection within Korup

The next eventful visit occurred when an African American, referred to as an American moved to Ekong Anuku in 1914 The American asked if he could cultivate some land in exchange for teaching the people of Ekong how to distill gin from palm wine. The American hired some men from the village including a boy who understood a little English [37] They built a house on the Ina River and planted tobacco however many of the seeds did not germinate The American and his helper trekked to Kumba, some 70 kilometers away to buy some more seeds On his return, he saw the river had flooded its banks, devastating his home beyond repair

The American asked the chief if he could have some men from the village to rebuild above the river's high water mark The chief consulted with the rest of the villagers however some argued against leasing the land to the American because it contained many wild palm trees Ownership of these trees was significant as they were an important resource for the village Apparently the American left in annoyance the very next day

[37] The boy s name was Obiro Inyang Awor

The Korup Today

Presently the Korup are on the decline. There are only six villages left of the original eight formed after the expulsion of the Oyoyong clan in the late 16th century. Several of the villages have either faded into the forest due to emigration, or absorptions into other Korup villages. Also, since the early 1940s, the area around the remaining settlements, noted for its unique biodiversity then, became a designated wildlife reserve by the British colonial government. The Korup were told they could no longer expand their existing croplands and were restricted to their present settlements. Because the Korup were there before the new official designation, they were allowed to remain in the area, but were threatened to go no further under penalty of imprisonment.

The Korup, who originally fell in the British portion of the area, were particularly affected by the advent of Cameroonian independence since the heart of Korup was cut in two due to the new International boundary. Four Korup villages are in the Anglophone Southwest division of French Cameroon, while the remaining two are now in English dominated Nigeria. Still united by one language, customs and tradition, and harboring a complete disregard for any political borders, the Korup are relatively isolated from either side. This isolation is partly a product of their inaccessibility and partly due to their suspicions of all others who they feel may want to exploit them.

Significant Secret Societies of the Korup

Secret societies remain an important obligation for all members of Korup villages. These societies not only function as a form of entertainment in these remote settlements, but as a method of communication, discussion, and law enforcement. Initiation into Korup

cults is considered a compulsory obligation as no one will want to be cut from hearing what goes on the village or tribe (Inyang 1988)

Inyang (1988) maintains that most of the cults are for entertainment purposes "the cult displays are so alluring that a man who is music oriented could not refuse getting initiated however poor or stingy he is " But this is also "coupled with the belief that when masqueraders display at somebody's death his soul is safely transported into the world below" and is given a good reception" (Inyang 1988)

There are literally a plethora of cults in Korup each assuming some important function in Korup society Inyang (1988) estimates that there are up to fifty individual societies that may exist within the Korup tribes The following section will outline three of the most important and influential secret societies of the Korup the Amkpo the Nabidi and the Ekwe

The Amkpo Society

The largest is the Amkpo society According to the Korup it has the cheapest initiations fees and it is the most powerful of all the societies Open to all males from age five and up, initiation fees vary among villages, but usually it only requires the donation of drinks and some type of palm fruits

The main function of the Amkpo society is to enforce and maintain the peace The Amkpo is said to represent the founder of all villages and patrols all the compounds to maintain their order The Amkpo society is said to also be in charge of maintaining the infrastructure and collecting the fees of the village If someone does not do their share of work in the village, or refuses to pay a fee the Amkpo can restrict the defaulter from any number of activities including hunting fishing or gathering forest products If the person

still refuses to comply Amkpo can call forth his children the Anchokurum to incessantly curse and embarrass the defaulter until he or she complies [38] Non-initiated man have to hide from the Anchokurum because it is believed that they may go blind if they even glance at the totem Women have to hide when the Anchokurum appears for they fear they might lose their powers of fertility, unless they pay a hefty price for a cleansing ceremony

If after all the preceding public pressure the person still refuses to pay the third and final repercussion comes in the form of the Ikpak The Ikpak is the final step similar to being served with a warrant by a formal court. According to Inyang (1988) "the militants of Ampko will under that atmosphere of secrecy, break into the defaulter s sitting parlor and pile kitchen waste and stones into it without causing any damage to or tampering with any piece of furniture therein. When the defaulter has no house of his own, the present house in which he lives is chosen " Additionally the Amkpo has the right to force any stranger or suspected criminal out of the village

The Amkpo will generally speak in Bayangi, the language of a nearby tribe totally different from the Dorup that the Korup speak, but who apparently share the same totem [39] The Amkpo can also jabber incoherently in Pidgin for comedy relief

The Nsihidi Society

A second significant secret society in Korup is the Nsihidi society According to Inyang (1988) this society is the most feared of all the societies and reserved only for the

[38] It is for this reason Korup women really fear and hate the Amkpo "They fear it because it is a foul mouthed husband' (Inyang 1988)

[39] Inyang speculates that the use of the Banyangi language heightens the effect and fear the Amkpo possesses because no Korup can understand him or plead for his leniency Efforts over the years to change the Amkpo s language to Dorup have failed

senior most powerful and self-controlled men and women of the tribe. The Nsibidi are split into men's and women's groups. While some men may join both the men's and women's society, women may not join the men's society. Additionally some men have not been able to qualify in the men's society but have qualified for the women's society.

This society is mainly an expression of the warlike qualities the Korup like to exhibit. Its masquerade symbolized the action and strength needed to win in battle. According to Inyang (1988) the masquerade represents a "brave 'spirit' generously blackened with charcoal and given a sharp machete which it handles meaningfully in the right hand." The Nsibidi, with its significant motto of "no mercy", appears with rattles tied around its right ankle to signal of its approach. And once it is on parade all non initiates must remain at their doorsteps to watch. Even initiates into the cult should follow it from behind because any figure in front of it could be beheaded immediately.

The Ekwe Society

Possibly the most significant of all the secret societies of Korup is the Ekwe cult. Ekwe is also the name given to the ceremonial hall found at the spiritual center of each Korup village. If a new village is to cleared, or moved, then the Ekwe house must be consecrated before the area is regarded as habitable.

The Ekwe society and its house is the place where all the histories, mysteries, and legacies of the Korup people are believed to be kept. As an oral society, this suggests that the members have a responsibility to guard and pass on the history of Korup to Ekwe initiates. Recruits of Ekwe are divided into several rankings accepted at various ages, that can begin quite young. Acceptance to the society really depends on the initiate's self control and secrecy rather than his age.

Becoming a member and committing to the education of Ekwe and its hierarchal stages can be costly and time consuming. New members are expected to provide refreshments and food for their village for up to seven days, however the benefits are quite rewarding as well. Initiates are taught the supernatural powers the Korup possesses. Some of the powers an initiate may possess are the ability to envision the totem spirit and the power to vanish or move from place to place unnoticeably.

According to Inyang (1988), as part of the initiation to Ekwe a new recruit has to go into seclusion. His body is then decorated with chalk and cam wood powder in various symbolic patterns. He then goes from house to house within his village where people offer him assorted gifts usually palm wine or money. The palm wine goes to his initiators and the gifts go to the Ekwe house but the money he may keep.

After the preliminary initiations the recruit then begins to learn the process of the society. An important part of this long-term process is the learning of a secretive sign language only Ekwe members can understand. Depending on his moral character, his ability to keep the secrets of Ekwe and, to some extent, his or his family's ability to provide for the continuous celebrations, the initiate over time can negotiate through the five hierarchal stages of the society. The primary education of the society is taught in the Ekwe a'bot stage. This is the basic initiation phase. On completion the secondary portion of the education is in either the Ekwe a'dibo or Nkanda a'dibo stage. This is considered the technical stage of the society that incorporates field research and experimentation. On completion of the technical and communication aspects of Ekwe, the initiate can then progress to the supreme stage of Ekwe a Bekundi. Here the initiate becomes an authority on all aspects of the society by mastering the use of forest medicines, the supernatural,

and the distinctive sign languages used in both N'kanda and Ekwe n'Dibo schools. The final stage is Beforo, which is devoted to research and contemplation.

With its elevated degree of discipline and education, resulting in universal respect, the Ekwe society also fulfils the function of village judiciary. It settles disputes and dictates the laws, and occasionally the punishments for breaking the law. As mentioned previously, the Anikpo society enforces the payment of village debt; however the Ekwe enforces the payment of personal debt. If debt is owed in the village, the Ekwe is sent after the debtor. Ekwe may even impose a bigger debt as punishment. Ekwe is also used to settle land disputes.

As with the previous secret societies, Ekwe also uses masquerades. Occasionally they are used as a decorative or entertaining masquerade, but mainly they are used for discipline. According to Inyang (1928) the Kimun masquerade is used to keep children from becoming wild and reckless. It functions as a disciplinarian that can use corporal punishment, but only for young boys. The Makara masquerade has essentially the same function, but can punish boys and girls, or men and women, and the masquerade will intervene in an argument at any time especially if fighting is involved. These masquerades may appear suddenly wherever there is trouble, with a cane in one hand and a bell tied to its waist.

Final Discussion

By discussing each of the societies and their primary roles in both Korup and Oroko cultures, it can be said that their functionality is not lost to modernization. Many of these masquerades and secret societies cannot be simply reduced to a cultural throw back of an earlier time now passed. These societies and their masquerades still fulfill a lively role in the instruction and maintenance of traditional morals and public conduct.

especially with young children who for whatever reason cannot attend school, or slip through the cracks of village or parental instruction These societies also serve a vital task in rural communities because they are an accessible, visible means of individual authority and personal accountability These societies and their various responsibilities are held to a higher regard than the relatively new government authority that seeks to replace these traditional institutions with public institutions

CHAPTER 6
LIVELIHOODS OF KORUP

Introduction

The following chapter provides descriptions of the major resources found in the Korup Park Zone that many people are reliant on for their continued survival in both good years and bad (Colson 1979). By examining the range of occupational interactions informants have with the available forest resources and the variety of land use alternatives conclusions can be made regarding local perceptions of the forest and the sustainability of seasonal livelihoods within good years and bad. This is important because when there is a change or disturbance of some kind in the availability of alternatives or suddenly a lack of choice normal subsistence patterns change. This may prove costly to the resource, as well as to the population that depends on it, as other resources may be used with more intensity or frequency perhaps depleting them beyond a sustainable level, or, at the very least disrupting the normal patterns of subsistence.

The following sections outline the various resource alternatives that the people of the Korup Park Zone rely on to sustain their way of life. A review of the most popular Non Timber Forest Products (NTFPs) the Korup Park Zone has to offer is also presented. Further the various mitigation variables that informants most often used to resolve disruptions to their households are defined.

Korup Forest Zone In Good Times and Bad

The Korup Park Zone is host to six diverse ethnic groups that depend on the various resources it has to offer (See Appendix H). Each group has a variety of methods

for using the forest during both good times and bad. Determining a good year from a bad year depends mainly on the criteria, objectivity, and recollection of the respondents perceptions of their own successes, failures, health or personal expenditures. In identifying "good times" a respondent may mean that there were no unanticipated expenditures due to illness, death, or any other unforeseen adverse events. Good times may also mean that crops were relatively unaffected by animals or pests.

Each month respondents were asked what the conditions of their crops were, and how much had been harvested. Respondents were also asked if there were any unanticipated expenditures due to some sort of adverse or positive shock, (e.g., birth, marriage, illness, disaster, death, or any unforeseen event). Then the respondents were asked what they specifically did to mitigate the effects of the shock. In all cases respondents used forest resources to some degree as a form of insurance to hedge against any adverse disruptions in their daily lives.[40]

Commercial and Non-Commercial Logging: In Good Times and Bad

Although commercial forestry is somewhat restricted in and around the Korup National Park, the local ethnic groups do depend on the forest for building the infrastructure of their livelihood. Logging exists on a small scale, but mainly as a cottage industry to supply local lumber needs.

Outside Korup Park there is some commercial exploitation and local use, but its extent is unknown and is supposedly limited to the issuance of permits by the local Chief of Post for Forestry to cut only several trees at a time, mainly for local construction. The amount of commercial extraction for export is also unknown, although concessions

[40] See Table 8-30

covering about 28,500 hectares have been granted in recent years in the areas directly surrounding Korup National Park [41]

Korup National Park is fairly isolated from the greater part of Cameroon. Its inaccessibility has prevented industrial commercial logging companies from large-scale exploitation as is often seen in other parts of Cameroon. However, much of the park's southwest periphery has been transformed into commercial palm plantations run by Palmol, a parastatal palm oil refinery. Palmol plantations are one of Cameroon's larger and older industrial plantations that originally started during the German occupation period. Its property, plantations, and industry were then transferred to the British-owned Levur Brothers Company and now it is a privately run company surrounding the periphery of the Korup Park Zone.

Logging companies have extracted some commercial timber from the northeast periphery of the Ejagham District, in the forest's support zone. As a result, several poorly constructed roads and bridges were built into the forest to allow easier access to this area. Political pressure by environmental groups, such as the World Wildlife Fund for the Protection of Nature and the World Conservation Society, persuaded the Cameroonian government to enforce a cessation of all logging in that region. However, some illicit logging still occurs, primarily in the Ejagham District, or "category three" region (Table 7-4) along the northeastern periphery of the park. [42] This area is furthest away from the core enforcement zone around Mundemba, and consequently further away from the main

[41] The main species exploited are Terminalia superba, Pogo oleosa, T. ivorensis, Standtia stipitata, Klainedoxa gabonensis, Chlorophora excela, and others

[42] The nature of this trade is illegal. Data concerning its frequency and development are extremely difficult and dangerous to get. Crossing borders and checkpoints with prohibited goods generally involves the illicit involvement of local authorities

headquarters of the Korup National Park Project. Although there is a satellite regional headquarters in the district, at the administrative center of Nguti, it does not have any real enforcement capabilities. Also, this area is easily accessible for larger vehicles because of the dependable tar roads that many use to access both Cameroonian and Nigerian markets.

This restraint on commercial exploitation in the Korup Forest – mostly due to lack of opportunity and transport – means that local farmer's dependence on wood products from the forest varied little between good years and bad. Most of the people in the Korup Park Zone have little experience with commercial logging and have not been affected by any variability of it as a resource.

For the people of the Korup zone, the primary use for most wood products is as a fuel source and for subsistence construction and light maintenance. Given the relatively recent restrictions on commercial logging, these uses are not considered unsustainable. For this reason, a farmer's use of fuel wood resources, and the revenues derived from this, have not been an object of analysis of either the management plan or this study.[43] With little opportunity for the local inhabitants to take advantage of rural commercial logging, at any scale, in any region of this forest or its support zone, significant profit from logging never became a factor for measurement.

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[43] In 1998, the first year of this study, Korup Park management and GTZ initiated a "Community Forest Plan." This was a new initiative where villages around the park, in the support zone, were informed of their new stakeholder status as custodians of their region. Stakeholder status had to be claimed in writing to park administration to be certified. This initiative was an effort to endorse indigenous responsibility for forests and resources around villages. Unfortunately it was not well understood by village elders. Illiteracy was one issue: people could not fill out the forms needed to lay claim. The main issue was that village elders already believed the forest belonged to their people, and any paperwork they were made to fill out to acknowledge this was superfluous.

Local Use of Forest Diversity in Korup

In contrast to the commercialization of wood products, commercial and subsistence use of wildlife products in the forest has always played a central role in the survival strategies of all the people of the Korup Park Zone. It can be said that the use of wildlife is to some extent an irreplaceable component of each individual's forest management survival plan and their main reason for remaining in the area. Local accounts from the various tribes in all regions of Korup ascribe historical roots to other areas, mainly Nigeria and the Congo Basin.[44] All the informants questioned attested to the belief that the founding fathers of their land, and of all the tribes around the Korup zone, were great hunters with the sole intention of finding better hunting grounds as their primary reason for moving to the Korup area. This seemed to be a common theme among many of the tribal elders from the various villages. Their stories recount village hunters building secondary dwellings in hunting areas, and then later moving there permanently, thereby initiating the growth of an entirely new village. Other reasons included migrations due to population expansion, tribal feuds, and migration due to periodic incursions by occupying Germans military patrols or plantation developers.[45]

Rather then historical incursions by German military patrols, there are now disputes between the desires of conservationists, who have somewhat replaced the old German guard, and the needs of the subsistence farmers who remain relatively unchanged.

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[44] Before independence, part of this region of Cameroon was also a division of British West Africa, later ceded to Francophone Cameroon after independence. Between one and two hundred years ago relocation to the area was prompted by accounts of ample hunting. Prior to migrating to the area in search of better hunting, all groups trace their historical origins in the Congo Basin. This is further explained in chapter 8.

[45] Further accounts of village and tribal migrations can be found in chapter 8.

Conservationists are concerned about trends in wildlife exploitation and anticipated crop expansions

It is even safe to say that the inhabitants of the forest and its support zone have accelerated their rate of internal forest clearance as a result of their steadily increasing population, making more demands on the limited forest resources This steady expansion has led to more slash and burn agriculture, as rural farmers tear away at new forest areas for either cash subsistence or commercial cropping. This will eventually lead to severe forest fragmentation as crop expansion introduces exotic species into this fragile and extremely diverse and complex rainforest

Informal (Bushmeat) Hunting

The consumption and sale of wildlife clearly has an important and critical role in the basic subsistence strategies of the people in the Korup Park Zone Wildlife is a source of subsistence protein and of cash revenue as a commercial resource This is mainly due to the huge market for bushmeat as a prestige product in Cameroon's expanding urban centers For this reason, the Korup Park Forest management plan has emphasized the termination of hunting in the core forest and has placed heavy restrictions on hunting for everyone living around the forest periphery Enforcement of these mandates theoretically includes educational programs that instruct hunters about their effect on the forest and its fragile diversity about the areas in the forest support zone that are to be avoided, and which species are targeted for preservation or can be hunted on a limited basis for subsistence.

For most of the residents of the Ndian Division, hunting is not considered a full time occupation as it might have been in the recent past Nonetheless, it is still a vibrant and emerging career opportunity for a small segment of the community for two reasons

First and for the most part wild animals are considered to be extremely destructive to subsistence and commercial crops. Many villagers, specifically older men and children hunt expressly to curb the rampant destruction of their family's crops by wild animals. Secondly, wildlife is a primary source of protein for home consumption. This type of hunting is mainly limited to trapping smaller ruminants, rodents, and occasionally reptiles (Table 6-4).

Several informants have hunted specific animals such as bush elephants, large leopards, antelopes, reptiles, porcupines, and others, expressly for their anticipated sales value to generate income. This mainly happens in anticipation of a large expenditure or in a crisis when cash is quickly needed. However, the driving motivation expressed by most of the respondents for their hunting and trapping activities is the menace posed by wild animals, such as monkeys, large cane rats (cutting grass), chimpanzees, and other animals that destroy farmer's crops, and then as a source of subsistence.

Overall, hunting can be somewhat unproductive at times, making it unreliable as a solely profit driven subsistence strategy. A hunter can potentially spend days out in the forest without much success, using up precious resources. The startup costs include a gun, a steady source of ammunition, rolls of steel wire for traps, and occasionally a significant amount of hard currency in case the hunter gets arrested. These elements are cost prohibitive for most rural villagers and can discourage some from becoming hunters. Another discouraging factor is the amount of accidental shootings and possible dangers in combing the forest at all hours. Not generally recorded, but frequent, are deaths due to friendly fire incidents, accidents due to the rough terrain, fallen trees, and the occasional animal attack. Still, throughout the Mundemba Sub-division, hunting remains an

important activity for those inhabitants who have access to the resources as the meat can be easily transported and sold to an increasingly urban population developing in the nearby urban centers

Seasonality

Hunting in Korup can and does take place throughout the year Presently there are no apparent universally accepted indigenous rules regulating hunting. Furthermore, hunting and trapping are not generally practiced with the same intensity throughout the year In the Korup Support Zone hunting and trapping are mainly confined to the rainy season although some residents do report that they hunt to some extent during the dry season as well

There are several reasons for this distinction Some residents believe that hunting during the dry season is easier and safer Hunters are able to go further and more efficiently throughout the forest, as there are fewer obstacles and dangers along the traditional trails Hunters also report that they may travel, or sleep with confidence, in a wider expanse of forest area. However the forest is quieter during the dry season, and the noises or scents of hunting parties are less obscured, scaring animals away During this time hunters are generally solo and smaller game animals are usually the main catch, by snare or by bow

During the rainy season while it is more difficult to traverse the terrain animals are easier to track and many more animals are present due to increased offspring For the duration of the rainy season hunting parties or solo hunters spend more time out traveling farther, and can usually camp in a secondary location within the forest for extended periods of time Hunters refer to these secondary locations as their "bush house." Hunters also remarked that during the rainy season their scent and sounds were

masked, making it easier to find larger game. However the forest is a more dangerous place to traverse during the rainy season. There are increased incidents of falling trees ragging rivers, and blocked paths, making it difficult for trapping and transporting.

Commercial vs. Subsistence

Wildlife is a primary source of food for an estimated 75 percent of the human population of Sub-Saharan Africa (Ashley 1974). As in most Central African countries, wildlife in Cameroon is frequently measured by metric ton, or tens of thousands of animals sold per year. Wildlife, locally referred to as "bushmeat," is an important source of revenue, however a considerable portion of the animals trapped or hunted are not sold.

Generally, animals that are trapped or hunted are grouped into two categories, commercial and household species (Table 6.1). Commercial species are normally species that are meant for sale after some processing. This processing includes skinning and drying or smoking the stretched carcass on wooden frames. The processed carcasses are then wrapped in burlap or plastic for transport to a commercial center.

While most animals are used for subsistence, several animals are caught specifically for their commercial resale value. The importance of hunting as a cash generating activity for men suggests that hunting is mainly carried out for commercialization. Apart from its potential as a very profitable livelihood, hunting and trapping activities are sustained by a certain number of factors that park management and conservation programs fail to understand, or offset with viable alternatives. These factors include:

- the complete absence of reliable and less expensive sources of animal protein;
- the regional socio-cultural role of bushmeat, especially during marriages and death celebrations;

- an almost complete absence of beef and the relatively high cost of beef compared to bushmeat,[46]
- The escalating demand for commercial bushmeat from outside the villages
- The relative ease and cost ratio of transporting bushmeat to consuming areas compared to other income-generating sources,[47]

Animals that are caught and consumed specifically for the household provide a large amount of the household protein A majority of the bushmeat that is used for consumption is primarily retained either because it is a highly favored meat (e g., pangolin, turtle, or cane rat), or because it is small and of little commercial value (e g the two spotted palm civet) (Infield 1988) As for the larger game animals certain portions of it are sectioned off and kept strictly for household use, usually a mixture of the vital organs The majority of the remaining meat and skin is then sold on the commercial market However, if there is no other meat available in the household commercial species are eaten

Table 6-1 illustrates the various types of bushmeat available in the Korup Park Zone and its approximate weighted value in CFA. Each of the animals is generally sold as a unit or half unit, or by the kilo if otherwise noted. While prices are negotiable the prices listed were essentially the average market values found in Mundemba or in the villages along the Korup Support Zone

It is also interesting to note that on any given day provided with ammunition, a hunter could either find one of the listed animals already in storage or go out on special order Within each village tested there were at least two hunters who had the skill to

[46] In the town of Mundemba, population approximately 5000 there are only two butchers who sell 2.5 cows per week at market.
[47] There are networks that exist in cooperation with local police and officials that aid in the illegal transport and traffic of bushmeat to regional capitals and cities

provide a steady amount of bushmeat despite all the restrictions and enforcement problems and procedures.

Table 6-1 Approximate Bushmeat Values From Korup National Forest in Cameroon, 1998 2000

Animals	Trade name	Price	Subsistence/trade	Method
Yellow-backed duiker side *	Bush cow	11000 cfa	Trade	Trapped/hunted
Side of blue duiker	Evuambo	5000 cfa	Trade	Trapped/hunted
Ogilby's duiker side	Bush deer	6000 – 8000 cfa	Trade/subsistence	Trapped/hunted
Greater cane rat *	Cutting grass	2000 cfa	Subsistence	Trapped

Table 6 1 continued

Animals	Trade name	Price	Subsistence/trade	Method
Forest genet *	Bush cat	5000 cfa	Subsistence	Trapped
Mongooses *	Fox	2000 cfa	Subsistence	Trapped
White belly pangolin	Catsar land'	1000 – 2000 cfa	Subsistence	Trapped
Small bush babies	Petsex	4000 cfa	Trade	Hunted
Red colobus monkey	Mbek	4000- 5000 cfa	Trade	Hunted
Monitor lizard *	Gumbah	4000 cfa	Trade	Trapped/hunted
Drill	Sumbo	5000 –19000 cfa	Trade	Hunted
White nose monkey	Nack	2000 – 3000 cfa	Trade	Hunted
Chimpanzee *	Gorilla	11000-15000 cfa	Trade/subsistence	Hunted
Large bush tail porcupine	Chuku-chuku	1500 – 3000 cfa	Trade	Trapped
Turtle/Tortoise *	Turtle	1000-1500 cfa each	Subsistence	Caught
Fish	Fish	1400 cfa kilo	Subsistence/trade	Trapped
Forest crocodile *	Alligator	3500– 5000 cfa	Subsistence	Trapped/hunted

* Not often sold

Household Use

Infield's (1988) study of bushmeat in the Korup National Park calculates that between 11 and 68 percent of households in villages within the Korup Zone admitted to

earning money from hunting activities, and that approximately 16 to 18 percent of village income is derived from trapping activities, and up to 38 percent from hunting activities This accounts for approximately 43 percent of household income. Presently the stigma over the recent illegality of hunting discouraged most, overt admissions to personal hunting Nevertheless, after a year of surveying several villages in the Korup zone, it became evident that every household in the region derived significant subsistence in either income or foodstuff from trapping or hunting

Generally the size, age and sex of the residents in a village have a strong bearing on the extent of the potential hunter/trapper population. Potential trappers are generally boys and men resident in the village between the ages of fourteen and sixty years Potential hunters are rural men between twenty and fifty years old who reside in the village These hunters generally use a gun as their primary tool however if no funds are available for ammunition, a bow or snare will be used.

Many hunters cannot afford the bullets or some of the equipment needed for a snare These hunters then generally work by contract for a marketing agent outside the village that funds individual hunters, provides them with a limited supply of bullets or snares and then receives a significant portion of the proceeds. When this is the case, hunters are then obliged to kill specific species of animals, of higher commercial value, that may also be endangered, such as a drill or rare duiker, or occasionally an elephant. This creates more risk and may carry very severe penalties if caught.

Relative Value of Wildlife

The sale of bushmeat around the Korup National Forest is quickly emerging as a local service industry Current commercial prices for bushmeat resold per piece in the traditional market are low (sometimes between 500 CFA and 700 CFA per kilo) and

despite being the favored meat, it is considerably cheaper than domestic beef (1000 CFA per kilo) (Table 6-1). Most domestic meat, mainly beef, is not as highly regarded as bushmeat. Domestic meat is also often difficult to obtain in rural villages. Tsetse fly and a lack of pasture inhibit a strong foundation for raising cattle. Cattle are brought into Mundemba in relatively small numbers by a few minority Muslim Fulani herders. Other sources of domestic meat are goat, sheep, pig and fowl. These however are usually reserved as forms of payment for some debt or for special religious or spiritual ceremonies and obligations.

In the past few years, hunting wildlife for commercial exploitation has grown in importance for some communities in and around the Korup National Park. Bushmeat exploitation has become a significant source of cash income for people who sell the meat and skins of the animals they trap or shoot. Historically, the general trend for hunting and trapping was for smaller species to be consumed locally, while larger animals were marketed. The most common of the marketable species is duiker and then certain primates. This trend, however, is changing due to a combination of factors, including increased demand and ease of access to commercial transport, better roads, increased scarcity, and an increased need for cash to buy durable goods. Hence, species like pangolins, reptiles such as the iguana, monitor lizard, and crocodile, and all small rodents, which were historically consumed by the hunters' households, or even only by children, now find their way into the local markets as a processed fast food.

The consumption of bushmeat by a burgeoning urban elite has also taken on a new dimension and status. With increased migration out of the rural areas to the urban centers of Cameroon, there has been a concurrent increase in the demand for the marketing of

bushmeat to urban centers. Moreover, with an increased affluence of migrants to the urban centers, bushmeat prices in cities have substantially escalated. This price escalation in combination with the desirability of bushmeat among the affluent has made the illegal trafficking of bushmeat even more attractive, not only to rural hunters, but also to police, government authorities and customs agents, and anybody else who might benefit from its traffic and distribution. Several recent studies have documented the size and importance of the wildlife trade in central African countries, including the Korup National Park (Bourlier 1963, Cremoux 1963, Charter 1971, Colun et al., 1987, Anadu et al., 1988, Infield 1988, Doungoube 1990, Edwards 1992, Payne 1992).

Perceptions of the Park

Among the respondents living in the park and the support zone there is a misunderstanding with respect to why there even is a designated park, and the reasons for its conservation. Infield's study of hunting practices in 1988 describes a common belief among people living around the park that foreign interests who wished to exploit it for some unknown purpose had somehow acquired the forest from the Cameroonian government.

Almost no respondents identified the park as a Cameroonian initiative (Infield 1988) intended for conservation. These perceptions still exist twelve years later, and, in a sense, have some basis in truth to the extent that the respondents feel that their liberties have been encroached upon for some unclear, ill-defined reason, like preservation. And yet, researchers and Europeans who are seen as the catalysts for the enforcement of village relocations and hunting regulations are able to use the park and its resources at their discrimination. What becomes clearly evident is that, instead of using the forest for hunting, these Europeans go sightseeing.

Wildlife Survival in Good Years and Bad —Estimation Per Household

Wildlife definitely is on the decline in Korup However there have not been any conclusive studies done to establish the degree to which regional hunting has undermined the population or the vigor of the remaining animals left in the forest. Nonetheless, hunting has either remained constant or increased locally as a source of liquid revenue There is an increased demand for bushmeat as urbanized locals, no matter their capacity or occupation find themselves further away from their ancestral grounds. And importing bushmeat to their new urban residence is both a sign of financial status and an accepted nostalgic connection to the rural lifestyle they left behind

Almost all the people of the Southwest Division depend on wildlife for animal protein (Waimdah 1986 in Infield 1988) Relative to the cost of domestic meat bushmeat is cheaper and easily obtainable [48] A result of this is that certain consumption patterns have evolved around bushmeats convenience in the village and in the market place. During rough times people of the Southwest Division rely on the idea that they can use the forest as insurance to smooth their consumption. And they generally do

While women do not hunt they still play an important role in the resale of wildlife Women who sell "pepe soup" [49] as a fast food adjacent to village markets or on the street, make up a discrete and easily identifiable sector of the bushmeat trade in both urban and rural environments (Infield 1988) Many women rely on this trade for a combination of reasons but first as their primary income or as extra cash when times are rough for their family or when they suddenly find themselves without a dependable subsistence base or a productive husband

[48] And more available on a regular basis.
[49] A traditional prepared spicy stew made of assorted or specific types of bushmeat.

In summary subsistence hunting is allowed with certain restrictions commercial hunting is not However enforcement is difficult and many men hunt or trap when extra cash is needed. This is usually between the traditional cropping periods or when there is some type of adverse or positive disruption that requires immediate cash e.g. marriage, death illness, disaster, and spiritual or societal obligations Much of their catch goes to the preparation of "pepe soup."

Despite this, hunters and trappers run the risk of fines, penalties and possible jail time for this activity, although women who sell the "pepe soup" seem to suffer no consequences for their supportive role in these illegal activities Hunting and its products, for both men and women is mainly seen as a subsistence activity, and then in times of crisis as an insurance activity Hunting is also seen as a hedge against animals that cause damage to critical subsistence crops Hunting then becomes indiscriminate and trapping is the main technique used to control and preserve their status quo Snares and nets are most frequently used and unfortunately do not discriminate against the endangered species.

The important issue here is that there are six villages in Korup s protected forest zone that are scheduled for eventual relocation, and many more in the support zone that border the periphery of the forest. For all those residents hunting is heavily restricted but in reality only limited enforcement can be achieved. However, hunting and clearing of land for agricultural expansion is still going on and will go on as these rural populations eventually increase in size

The eventual outcome of conflict between hunting activities and conservation still remains to be seen Both are taking divergent paths. Increased enforcement can

eventually slow down the commercial aspects of hunting and commercial crop expansion, but for subsistence use there is still no alternative. Domestication of certain species or better rural education toward an adherence to conservation strategies may be an option, but it is clear that strict enforcement with the intention of preventing all hunting activities will prove less effective as the population of hunters increases and the resources to patrol the forest decrease.

Rural hunters obviously have a stake in protecting their interests in the forest as do those who wish to conserve it. Finding that mutual position where both can achieve an enforceable solution is the problem. Protecting, conserving, and consuming wildlife can work, satisfying everyone's goals if wildlife is seen as a commodity that can be realized beyond its present illicit value. More research is needed directed toward finding a sustainable balance between consumption and preservation. Any appropriate planning here can only be successful through the participation of both those who make policy and those affected by policy. Professionals with considerable experience among indigenous people and with their particular ecological zones must also engage in the planning. For resource managers, the benefits of working intensively with indigenous groups includes gaining an additional constituency, recruiting personnel with profound knowledge of the local areas, and learning about long term resource strategies in order to determine their effectiveness or damage.

Cropping / Cash and Subsistence Farming

The second most important resource strategy in the Korup Forest Zone is harvesting for subsistence or for cash (See Appendix F: Main Cash Crops). Both men and women provide surplus harvest to some extent to the household in one way or another. However there are some distinctions in the way they do this. Men do not grow the same

crops as do women. Women generally grow subsistence crops such as assorted yams, colocasia, cassava, plantains and bananas. Men generally concern themselves with cash crops such as cocoa, coffee and palm. Men do not grow cocoyams or colocasia, but they will grow plantains or bananas. Most of these crops will go straight to sale with the occasional exception of plantains. Generally men mono-cropped these crops in their plots, while women intercropped these crops with other varieties or condiment crops.

Cocoa

For the majority of the villages surveyed, cocoa was the main cash crop for men who used as much as thirty to forty percent of their fields exclusively for cocoa production. Many farmers waited anxiously for the cocoa harvest time, as this was one of the few sources of conventional revenue that they had.

During the late part of summer when farmers harvest their cocoa crop they begin the grueling task of collecting as much cocoa as they have sacks for and then hauling it back through the forest to the village to dry. Usually this is done with other men in the household or with other farmers of the same "djanggis" work group or age group.[50] Once the cocoa is hauled back to the village compound, the farmer then assumes all responsibility for the rest of the process. The cocoa is laid out on mats in the sun to dry. As it is generally quite humid this process may take several days or weeks, depending on the weather and humidity.

Transport

Villages that are located near recently constructed navigable roads are more fortunate because transporting the cocoa out of the village can be a punishing task. Sacks

[50] "Djanggis" can be a work group or a saving group, distinctions discussed in chapter 8.

used generally come in both fifty kilogram and one hundred kilogram sizes Taxis that frequent the seasonal roads are notoriously hazardous and cannot accommodate the weight and strain of transporting hundreds of kilos of cocoa during the season During this time many buyers from larger towns like Kumba make the voyage north to several rural areas and negotiate prices and quantities of cocoa prior to the harvest

These buyers can only get to villages along navigable roads So farmers that live in villages far from the road are required to haul their coca sacks to neighboring villages or their families or acquaintances near the road Since there is no real communication between distributors and cocoa suppliers, buyers have to chance on meeting with cocoa suppliers who may be available Some farmers take the added expense to seek out buyers in main towns to invite them to purchase their cocoa, but this happens infrequently Those who miss out on meeting a buyer may have to sell their lot to another farmer at a lower cost just to get rid of it before it is too late to sell.

There are few buyers and several of the cocoa buying companies (e g., Cargil) stake out exclusive regions to buy cocoa. In most cases there is no continuity and there is just one buyer for one region That buyer may buy one year then the next year another buyer may take over that region These buyers are from private companies and they hire large transport trucks to pick up the cocoa at specific times

Pricing

Seventy percent of the world s chocolate is harvested in countries such as Cote d'Ivoire, Cameroon and Nigeria Cameroon s cocoa market was liberalized in two stages in 1991 and 1994 This meant that anyone could register as a cocoa exporter This resulted in a fragmented marketing system as 606 companies registered in 1991 as export

agents (allowing just 165 tons of cocoa per exporter) (Gilbert 1998) The marketing chain in a liberalized system is as follows the farmer sells to the domestic shipper who sells to an exporter The exporters receive loans from banks to make the cocoa purchases After quality assessment the exporters sell cocoa either to overseas trade houses and grinders or domestic processors The farmer can also sell directly to an exporter (Gilbert 1998)

Following the initial rush of exporter registrations after liberalization, the number of licensed exporters dropped to around 25 Three processors – Callebaut Cargill and ADM – dominate purchases of Cameroon beans (Gilbert 1998)

Because cocoa is an important international commodity, the Government of Cameroon sets its price nationally and then broadcasts it nationwide over the radio In actuality farmers do not get the national price for their cocoa A cocoa buyer or exporter agent determines the price he is willing to pay for cocoa This price may be 50 percent less than the national price set by the government. Buyers of cocoa know this and furtively set a price among themselves even before heading out to the regional areas. Farmers are left with little recourse because they cannot get their cocoa out of the villages on their own Farmers alone cannot requisition vehicles large enough to transport their cocoa to a processing plant Bad roads are usually factored into the price farmers receive for cocoa per kilo However, cocoa buyers who generally are educated agents of large multinational commodities-exporter companies have all the advantages in any negotiations with rural farmers

If farmers can somehow get their cocoa to a regional cocoa processing facility they generally cannot sell directly to the processing plants There are minimum purchase requirements that buyers have set up that prevent small holders from directly dealing with

the processing or distribution plants. For example, one farmer with five hundred kilos of cocoa cannot sell directly to a processing plant and gain a state price (which may increase his income by 50 percent). A farmer would need to have at least 1000 kilos to sell directly to the cocoa processor. Thus, farmers have no way to maximize their price per kilo, and it is impossible for a farmer to requisition a vehicle that would transport 1000 kilos of cocoa.

Pricing Constraints

Due to these constraints, farmers are left dependent in many ways on cocoa buyers. Farmers generally negotiate exclusive prices with buyers. Once this price is set, it is recorded and no alterations are made no matter what the state price may be. It is not uncommon for various farmers in a village to sell their cocoa at assorted prices. Farmers generally do not pool their cocoa and demand a set price. While they know the price that the Government of Cameroon sets annually, they generally have to accept the price offered to them by the agents who come to buy, as there is no other recourse. Farmers generally do not discuss their price with other farmers.

Cash Value

The price for cocoa fluctuates yearly, and one year's price has no bearing on succeeding years. In 1999-2000, the price issued by the government was approximately 750 CFA per kilogram for cocoa. However, in the village, prices averaged about 350 CFA per kilo, just less than .50 cents US per kilo. The preceding year, 1998, the government price for cocoa was higher, at 1000 CFA per kilo. The price in the village was about 650 CFA per kilo, just less than a dollar per kilo. Usually farmers take what they can get and shrug at the disparity, hoping for a better harvest and price the next year.

Receiving payment for cocoa production is also a protracted process. If a farmer wants immediate cash, then he generally has to wait maybe up to three or four months after the initial sale to receive his cash. Some farmers negotiate for durable goods like kerosene or beer in lieu of cash. This way there is a good chance the merchandise will arrive with the transport truck that picks up the cocoa.

Data on the annual production of cocoa is incomplete. For Mundemba, local cooperative figures place the annual production at anywhere between 150,000 and 190,000 tons. These numbers are incomplete and underestimate the actual figure because much of the cocoa is sold outside the Mundemba Subdivision to private contractors and private buying agents in other divisions.

Coffee

The next main cash crop reported to earn an income is coffee. While coffee prices are on the rise worldwide, Camerooman coffee as a cash crop is on the decline in the Korup area due to several constraints inhibiting its production. Coffee requires a dedicated field and its price fluctuates even more than cocoa.

Although unsubstantiated, farmers interviewed also believe that the Government of Cameroon has a law that forbids the destruction of coffee plants once they have been planted. Additionally, coffee takes several years before it can be first harvested. Generally, the bean is dried and then sold to a buyer. It is not roasted or prepared at all in the village.

Coffee once was a chief export of Cameroon, farmers were encouraged to plant it and keep planting it. Farmers explained that historically the government offered various incentives to plant coffee. But when the bottom fell out of the international coffee market, most farmers in the Korup area did not see the benefits of maintaining its production.

Farmers believed that they were not allowed to destroy the plants so fields were left fallow. When coffee prices escalated once again, farmers did not see the utility in maintaining or reintroducing a crop that takes several years after the initial planting for any type of marginally profitable harvest. Besides, the Korup region is not particularly known for, or encouraging to, good coffee.

Coffee production numbers are also difficult to ascertain. Some cooperatives in the adjacent Manyu Division place their distribution at between 282,255 and 508,691 tons per year. Coffee is sold to private contractors and buying agents outside the Mundemba Sub-division and is difficult to record with any accuracy.

Palm Production

Surrounding the southwest sections of the Korup Park Area is the Palmol plantation. The Palmol estate is located at Ndian, near Mundemba, and employs about 500 people on a mono-cropped plantation of 4,500 hectares. For the past few years the company has been in a state of voluntary liquidation, but the estate is still operating. Although the 100 year-old mill has been closed, it is being refurbished to some extent for a re-opening as efforts to find more backers continue.

Palmol mainly grows palm trees for processing palm oil, a basic ingredient in cooking oils, industrial lubricants, and soap. Historically this area has been productive for palm oil production. It takes five years to benefit from one of the exotic saplings that are planted here, and they have a life span of 30 generating years. Although the production facilities in Ndian manufacture refined yellow oil, there is an increasing market for the more indigenous variety of red palm oil, as it is a staple food in the region and for most rural Cameroonians. As a result, red oil is exported to urban markets whenever possible. There are several rural refineries of red oil, but they are a antique

industry that is only able to supply a limited demand and much of their supply of palm nuts come surreptitiously from Palmol plantations

Many farmers do have dedicated farms for palm trees Some farmers reported up to ten hectares of area reserved for their palm plantations. The Korup Park region while isolated from commercial logging, has not been spared from commercial palm plantations For the most part palm trees are seen as a legacy for family income and it is the only cash crop that is processed and also used as a subsistence product. Generally older men have access to enough space and time to cultivate their palm plantations

Oil production data from 1984-1986 showed the annual average production of the Ndian Palmol estate to be 38 843 tons plus 2 466 tons from individual small holders (Master Plan 1989) After 1987 and 1988 following the closure of the antiquated Ndian mill, production declined because much of the plantation had been abandoned due to difficulties in transporting the palm during the rainy season from Mundemba to the main mill in Lobe some 30 kilometers south The annual average production for these two years was 27 837 tons from the estate and 809 tons from small holders.

Palm has several uses – subsistence recreation, and trade. The nuts are picked and can be processed to eat They are also refined into cooking oil There are two types of palm oil refined oil and crude red oil Crude red oil is a staple in food and sauces and a commodity in the rural areas of the southwest In the village red palm oil may be worth up to 350 CFA per liter and a half (a local unit of measurement), about 1 50 US a galloo The price rises exponentially the further away it is transported from the source of production In Douala red palm oil can be priced as high as 3000 CFA per liter, about four dollars US

Processing red oil is difficult and to do it requires some infrastructure. Most people who harvest palm as a cash crop sell the nuts to others who can process them in bulk, or they are sold directly to Palmol. Palmol owns its own refineries and produces only the refined clear oil that is sold nationally. Most people in the southwest use the crude red oil.

Palm trees also are tapped for their sap. The sap is known as palm wine and is consumed as a drink either right away, or is left to ferment for an hour, at which time it becomes slightly alcoholic. Known as "affofo", it is also distilled and used as a strong alcoholic elixir, or in combination with any indigenous medicine as a base ingredient. Women do drink the wine, and occasionally transport and sell it, however they are not involved in its collection or processing.

In contrast to cocoa production, palm production is more lucrative for the traditional farmer, however it requires more dedicated acreage, time and experience to successfully maintain. Older farmers or younger inheritors with adequate acreage are able to successfully maintain a palm plantation. Also, prices for palm are more negotiable and stable than prices for cocoa. Farmers are more in control of their product, and, to a limited extent, process it themselves. Because of Cameroon's historic relationship with palm, processing plants are closer to rural producers in this area, and the negotiations for its sale are relatively easier.

Plantains and Bananas

Plantains and bananas are mainly considered to be subsistence crops, however many people do sell their plantains at market, mainly to travelers or urbanites who do not have land. This can be an important source of cash income for women or children who have no other access to cash. Bananas and plantains are also a staple food for all families living in the Korup Park region. However, banana and plantain groves are vulnerable to

heavy rains winds primates and occasionally theft Each month several "suckers" would fall victim to one of the mentioned vulnerabilities. This would affect the projected earnings of women who depend on these crops as a source of revenue There is no clear market value for bananas and plantains The price is extremely volatile and negotiable set seasonally by national market fluctuations A bushel of fifty to seventy plantains may fetch anywhere between 700 CFA to 1400 CFA one to two US dollars.

Cassava, Cocoyam and Colocasia

The remaining subsistence crops include cassava cocoyam and colocasia. These crops are mainly stored and gathered, as needed, from the farm They are generally not stored at home and it is not uncommon for the women of the household to go out every other day and collect 20 to 25 kilos of one or the other. These crops may remain in the ground for long periods of time. Occasionally if cash is needed, women may sell a few kilos at the market Prices are generally low, and the products are fairly common The only real value is to get these products to an urban center where people who have no access to personal farms areas may buy them otherwise there is no real cash incentive to market these goods

Fishing

There are many rivers and streams winding their way through the Korup region and they serve several purposes First, they serve as a fixed border between neighboring villages or croplands Whenever there is a border dispute, village elders rely on the rivers and streams to map out their ancestral territories. Therefore rivers and steams are an important feature for boundary or land tenure division.

All of the villages in the region use rivers, streams and springs as their source of water There does not seem to be much evidence of a determined urge to install in-ground

wells in lieu of the existing system unless it is promoted and paid for by an outside funding agency. Every villager will express an interest in getting a well, however wells never seem to get funded. Many village elders see rivers and streams as a source of life, given to them by God and that this life is evident to all by the fish that live in it. Wells do not have fish or anything else in them except for water for that matter. Essentially many older residents see no God given life there and prefer source springs.

Fishing is very important to the people of the Korup Area zone and the tribes of this southwestern region pride themselves on the availability of fish in their streams. Everybody seems to participate in fishing or trapping products from the rivers and streams. This is interesting because hunting is exclusively a man's endeavor. Fishing is different because both men and women have access to this important resource.

Fish play a particularly important nutritive role for women and children. Because men generally control the capture and distribution of bushmeat, women and children conceivably may never get limited access to this type of protein. Since everyone can take part in fishing, a considerable amount of protein for the family can be caught with much less effort and expense than hunting.

The number of fishing episodes carried out per month may vary greatly. Some respondents fished every week while others reported that they fished only once a month. Infield's (1988) study suggested that people claimed to fish between one and twenty episodes a month averaging 6 episodes a month. He suggests and it is evident, that there is a real recreational aspect to fishing and usually it is less dangerous than hunting.

Of course the object is to catch enough for personal consumption, but, if the catch is extremely good, then the fish have a commercial potential too. Commercial fishing

may take several nights of work to reach the projected quantity...and fisherman may travel to various streams to pull in their nets or baskets Specialist fisherman may even spend as much time out as do commercial hunters (Infield 1988)

Commercial fishing can be individually done..but occasionally it is a group or family activity In either case commercial fish that are caught are sometimes sold fresh when possible, usually only locally as a fast food. Prices for fresh fish fluctuate and are highly negotiable. Due to transportation constraints, much of the catch is immediately smoked or dried, sometimes shredded, then transported to a larger market It is in this capacity that commercial fishing becomes profitable.

Generally subsistence fishing takes place throughout the year However some of the rivers are too treacherous to lay and retrieve nets Many fishermen have either drowned navigating them or lost their nets or basket during the rainy seasons. Nets and baskets can only be safely used in shallow waters Rainy season storms can wash away nets, so most of the fishing is done when water is relatively calm. The length of the fishing season is thus determined by the water levels and the onset of heavy rains (Infield 1988)

Rearing of Animals

Domestic animals produce little and are said to cause more of a nuisance in many of the villages surveyed than they are worth The reason for this is because domestic animals range freely throughout the village They are free to destroy crops and personal gardens Many villages have either placed restrictions or have banned free-range animals entirely So animals are then sent to other villages where they either get stolen or used surreptitiously as fees for other family member s debts or obligations

The most popular domestic animals that are reared in this region are goats, sheep, pigs, chickens and duck, occasionally geese. While all these animals hold a potential commercial value, their actual economic value is generally ignored. Except for chickens, these animals are rarely slaughtered for subsistence. Rarely are they sold for profit. Rather they are kept either for gifts, celebrations, or as payment for secret societies, or for traditional medicine. Rural villagers generally do not purchase these animals from one another. If one is required for a specific purpose, they are reared, or gifted by another family member.

Non-Timber Forest Products (NTFPs): In Good Years and Bad

The economic contribution of NTFPs is sharply debated in the literature (Pattanayak and Sills 2001; Perez and Byron 1999). While acknowledging that NTFPs are unlikely to serve as engines of local development, many researchers have drawn attention to their supplemental or fallback role (Pattanayak and Sills 2001; Godoy et al. 2000). In this capacity, NTFPs are seen as supporting economic development and serving as a safety net for households entering new economic activities and markets (Byron and Arnold). Godoy, Jacobson and Wilkie (1998) also suggest that "how the forest is used as a safety-net deserves closer empirical scrutiny."

Researchers considering the supplemental role of NTFPs suggest its particular importance for the poorest of all households (Godoy and Bawa 1993; Hecht et al. 1988; Reddy and Chakravarty 1999); and this is also consistent with the broader themes in the literature on risk mitigation. Pattanayak and Sills (2001) remark that there is considerable heterogeneity in NTFP collection that has been linked not only to income, but also to an array of "macroeconomic, geographic, and household factors shaping resource-use patterns of forest peasant households" (Coomes and Barham 1997). Current literature

often relates these features to forest dependence. This can be defined as the quantity of NTFPs collected or sold multiplied by their market prices (Pattanayak and Sills 2001)

Studies conducted have illustrated alternative approaches to the challenges of quantifying diverse NTFPs collected at irregular intervals (e.g., Shamsundar and Kramer 1997 Wickramasinghe et al , 1996, Grimes et al., 1994 Wollenberg 2000) but they do not explicitly analyze the function of forest products in the livelihood strategies of these rural households (Pattanayak and Sills 2001)

This section illustrates the integral role that NTFPs have in indigenous rural subsistence strategies as a means of maximizing their consumption. Collecting and trading in NTFPs is of great importance to the economy of all in the area. Their reduction or loss as a resource or a source of income could have far-reaching implications.

Table 6-2 Non-Timber Forest Products (NTFP) and Crops of Importance

Village/eal	Cash NTFP crops	NTFP Crop 1	NTFP Crop 2	Subsistence NTFP in order
Fidze / 1	Bush mango, Shell nut, Njangsang[31]	Bush Mango	Njoogsenga	Shell nut, Njangsang, Bush mango
Bisondo bonda / 1	Bush mango, Njangsang, Shea nut, Njabe	Bush mango	Njangsang	Bush Mango, Njangsang, Shea nut
Toko / 2	Ngakanga (country onion), Njangsang, Cam. Bitter kola	Ngakanga	Njoogsenga	Ngakanga, Njangsang, Bush pepper & ripe kola Cam. monkey nob plume
Abut / 3	Bush Mango, Njangsenga (Bush magi) Bush pepper Njabe, Basilement, Bitter cola	Bush Mango	Njangsenga	Country onion, Njangsenga, Njombre, Bush mango, Basilement
Mgbegan / 3	Bush mango, Njangsang, Shea nut, Bush pepper Njabe Country onion, Bitter cola, cola Basilement	Bush mango	Njangsang	Basilement, Njangsenga, Bush mango, Njabe, country onion, Bitter cola, Cam
Mmangwe 1 / 2	Ngakanga, Njangsenga, Bush pepper	Ngakanga	Ngakanga	Ngakanga, Njangsenga, Bush pepper Plume
Mmangwe 2 / 1	Njangsenga, Bush mango, Shell nut	Njangsenga	Bush mango	Bush mango, Njangsenga, Shell nut, Bush pepper Mbenga

[31] Found in the Rumpi Hills, it is a type of bay leaf, locally referred to as "country magi" and is used as a spice.

The collection of NTFPs seems to be a universal strategy used by all within the study they are primarily collected by women and young girls (See Appendix G Main NTFPs) Most of the items listed in Table 6 2 are used to supplement household consumption either directly or as a cash crop However since the value of these products is relatively low in comparison with other forest products the collection of NTFPs remains an occupation that can only supplement rather than supplant any other cash generating activities. In this context households see continual NTFP collections, no matter how little their relative value may be, as a resource that adds to their current year savings, thereby helping them to smooth out risk or alleviate the impact of future agricultural income shocks Institutional knowledge of NTFPs naturally increases with their increased use and dependence. This knowledge of the forest resources and a motivation to increase savings suggests that gathering NTFPs is a part of an income diversification strategy in response to any expected income loss or long-term agricultural risk

More frequently recognized components of this strategy include investing in liquid assets (e g. livestock) and the development of dependable social networks Cattle have always been considered as a diversification and risk mitigation strategy in Africa. However, due to the prevalence of tsetse fly and lack of sustainable pasture, livestock could never be adequately supported in this area. Additionally, smaller ruminants have always been considered pests and hunting has historically provided all household meat requirements, therefore cultivation of livestock remains an unattractive option

Eco-tourism

Tourism has the potential to contribute to the local and national economy through foreign exchange, local employment and new business opportunities Rainforests have a very popular appeal to international tourists, recreational explorers and researchers

interested in flora and fauna. Over the course of one year more then a dozen groups of amateur adventurers, volunteer workers, ornithologists, botanical and butterfly groups all put Korup on their itinerary. A cornerstone of the Korup Project's goal is that local people should benefit from such development (Ministry of Plan and Regional Development 1986).

Eco-tourism is a relatively new concept in Korup. There are many new tourist sites developing in the Korup region; however there are also many constraints to viewing Korup as a tourist location. Foremost among the constraints is that reliable and safe transportation to the Korup National Park has always been difficult to arrange. Until the construction of a seasonal dirt road north from Ekondo Titi in 1986, the only way to get to the Korup Park was via a Palmol transport ship via the seaport at Ndian, or by hiking sixty kilometers through some potentially dangerous terrain filled with all sorts of obstacles. Even today, Mundemba rests at the end of a long and muddy or dusty route and at times a physically dangerous road, depending on the season. Isolated, at the end of the road, Korup Park had not been part of the traditional circuit travel itinerary favored by most eco-tourists. Unless a visit to Korup can be made part of a circuit including a boat trip from Limbe, tourists would have to backtrack (Ministry of Plan and Regional Development 1986) along the same path, leaving the Korup Park to only the most determined of travelers.

Tourists are demanding in both time and resources. The Mundemba and Korup infrastructure may not be able to accommodate the continual demands of maintaining visitor facilities, e.g., basic electricity, clean water, secure lodging, secure food availability, communication, reliable restaurants, and most importantly, transport into the

park. The maintenance of these services is generally considered a constraint on resources, and as a result infrastructure to support a burgeoning tourists industry is minimal. Simply, the local population and infrastructure are not accustomed to all but the most seasoned eco-tourists and their demands.

Another critical problem for Korup is that the entrance to the park is ten kilometers away from Mundemba town, where headquarters administration and tourist facilities are located. Transportation would have to be individually arranged both ways by the Korup project. This is difficult without any communication facilities in town to project headquarters or to the park. Frequently, project vehicles have broken down or simply have not shown up to transport tourists either way. Tourists are frequently seen wandering from and to Mundemba town after several days of difficulty hiking, using the same rainforest paths that are frequented by Nigerian smugglers, military personnel, and illegal border crossings.

Ultimately, transportation to Korup should be arranged from Kumba or Limbe. Often tourists underestimate the time, difficulties, and expense in getting to Korup Park. When they finally do arrive, they often are too worn out, aggravated, and short on time to appreciate the environment or see any animals. Tourists also over-estimate their abilities and stamina and typically misjudge the amount of time needed to fully experience the potential of this unique rainforest. Tourists can only hope to experience this rainforest on foot and the sighting of large mammals is infrequent compared with the larger African savannas or well-maintained commercial safari parks.

Conversely, tourism can be a key component in rescuing this park. Through tourism, local infrastructure can be supported and expanded. Tourists' willingness to pay

park fees and support local markets has been evident and observable in other parks with an effort on conservation, e g , in Zimbabwe, Namibia, and Kenya.

CHAPTER 7
FOREST ECONOMICS

Introduction

This chapter details the variations of wealth and income sources and how these variables are achieved regionally. This chapter further emphasizes specific patterns of village economics, forest use and the diverse forms of resource development and management that occur in the Korup National Park. A discussion regarding the range of adverse shocks experienced by specific villages, normal year strategies, specific shock responses, and the available alternatives used to mitigate the consequences in good times and bad conclude this chapter.

Key Variables on Forest Use Separated by Region

In conducting this study, six villages were chosen in three different regions of the Korup Forest Support Zone. The following section outlines the range of forest uses separated by those regions. The variables measured that determine gross forest use come from observations made of the income derived from the forest, in the form of hunted game, plants and fruit, or any product with a cash value taken from the forest between the years 1999 and 2000 (Table 7-1). Table 7-1 illustrates these observations as they were taken regionally, defined here by their categories – Otkoko/Korup = Category 1, Oroko = Category 2, Ejagham = Category 3.

Table 7-1 Forest Use in Korup Park Region 1999-2000

Category	Group	Forest Use in Korup 1999-2000 (gross forest variable)[52]		
		Mean (CFA)	N / SD	Max (CFA)
One	Oroko/Korup	12,327 17	23 / 46325 5	221,000
Two	Oroko	450	39 / 2424 41	15,000
Three	Ejagham	2,391 3	23 / 5640 673	25,000

Table 7 1 illustrates the monthly gross revenue received from all forms of forest resources measured in CFA This includes NTFPs game income from fishing and hunting, and plant and fruit income that includes cash and subsistence crops taken from the forest (i.e. marketed foods subsistence foods agricultural products, foraged products, etc.) Category one villages, while mainly in the Korup Support Zone are closer to the forest and therefore have more of a stake in its resources Every informant in the study had some involvement in collecting various forest resources

Category two villages a little further away from the forest, were historically more isolated from any larger market Only recently (1996) have a dirt road and a dependable bridge (1997) been constructed deep into this support zone, allowing the villagers access to larger markets in Mundemba[53] Prior to that, commercial products could not be transported from this area. The condition of the road and a lack of reliable vehicles restrict any large-scale transport of commercial goods that could be sold in Mundemba markets Occasionally, commercial vehicles manage to get through and collect some cash crops (e.g. cocoa, coffee or palm nuts) Eventually as the demand for these products increases this road will be used more frequently and sustainably Until then gross forest

[52] Gross Forest = forest income + game income + plant income + fruit income
[53] Korup Road project 1996 funded by WWF/EC, and the Mana Bridge project funded by the US DOD 1997

product from this area will be very low due mainly to a lack of cash or production for anything other than the collection of crops or products used for subsistence

Category three villages are at the northeastern corner of the Korup Park Zone While in the support zone they are furthest away from the main headquarters in Mundemba Data from this area are relatively light This is due mainly to the difficulties in data collection experienced there Data for this area could only be taken during the preliminary stages of this research over the course of three months during the early part of 1999 The data sets are complete for the period taken, only they do not reflect the average for the entire year

Unfortunately due to the highly sensitive nature of data concerning wildlife revenues the reliability of this measurement may be of concern for all categories Furthermore until about the sixth or seventh month of the study, many of the informants were very reluctant to admit to the extent of their wildlife hunting activities or if they even hunted at all Therefore this part of their revenue may be under reported. Nevertheless it is possible to talk about some broad regional trends in subsistence and commercial income from this variable.

Category One Villages

Informants from category one villages the Oroko and Korup groups relied by and large on hunting and the use of forest products for their livelihood, more so than the other villages (Table 7-2) Their higher cash values and revenues indicate more of a dependence on forest products as a resource than on other sources of income Informants from these villages also supplemented their livelihood with some cash crops and, to a lesser degree with subsistence crops (Table 7-5)

Table 7-2 Gross Cash Wealth and Revenues for Korup Park Area villages 1999 – 2000

Categories	Villages	N	Wealth / SD	Min/Max	Gross Cash Crop Revenue	Min/Max	Cash Value of Production	Min / Max	Gross Cash Values Forest Product	Min / Max
One	Fabe	20	30 537 45 / SD 44439 5	2,500 / 172,500	2 446 2 / SD 5898.8	125 / 25000	6 676..5 / SD 11550 2	931 / 47000	3 001 25 / SD 9405 739	425 / 41 500
	Ekundu Kundu	3	179,491 / SD 112095 9	92,493 / 305,990	31, 666 6 / SD 54848 2	0 / 95000	109,500 / SD 187498 7	2500 / 326 000	74 500 / SD 126878 9	2 500 / 221,000
Two	Toko	22	21.225 / SD 46737 09	800 / 193000	1.797 7 / SD 4670 8	50 / 20000	2,143 2 / SD 4604 6	50 / 20-000	1,15 9 / SD 532 6	50 / 2500
	Meangwe 1	17	28 558 65 / SD 49238 8	1.000 / 164,500	5 676 5 / SD 19138 4	500 / 78000	6,205 9 / SD 19774.6	500 / 81000	882..4 / SD 3638 0	0 / 15 000
Three	Abat	9	465,948 9 / SD 975951 8	30 000 / 3,055,000	11, 922.2 / SD 17817 2	2000 / 52000	13.666 7 / SD 18448 9	1000 / 54500	4 388 9 / SD 8454 9	4 500 / 25 000
	Mgbagats	14	1,366 42 9 / SD 160622.5	2.000 / 633,000	5,217 9 / SD 7554.1	50 / 20000	6 182 1 / SD 7323 2	50 / 20000	1 107 1 / SD 2305..3	3 500 / 7 000

While informants from category one villages have higher revenues derived from the forest than other informants, difficulties in marketing their cash crops or forest products due to their inaccessibility, have had an effect on their total revenue, which is lowest of all three categories (Table 7-2)

Category one groups mainly live in and around the core forest While the soils are fertile, they are less favorable for sustained crop yields Wild animals and inclement weather also have a significant effect on the maintenance and sustainability of crop yields Informants from category one villages also depend mainly on the forest for protein Domestic animals are not used for protein among these villages Tsetse fly and a lack of adequate pastureland inhibit any attempts at a sustained agrosilvo-cultural system Many villages even maintain prohibitions on free-range domesticated animals within the village and its crop areas.

Table 7-3 Cash Crop Revenues in Korup Region 1999-2000

Category	Group	Cash Crop Revenues in Korup 1999 2000 (cash crop variable used)[54]		
		Mean (CFA)	N / SD	Max (CFA)
One	Oroko/Korup	6 257 6	23 / 20119 18	95,000
Two	Oroko	3,488 46	39 / 13041 3	78,000
Three	Ejagham	7 841 3	23 / 12662.96	52,000

Category Two Villages

The second category of villages (Oroko) is further away from the core forest Informants from this category rely to a large extent on subsistence crops and then cash crops (Table 7-3) In contrast to informants from category one villages hunting activities are not an important supplement to their income either Bushmeat as a subsistence resource, however is their primary source of protein

[54] Cash crop = farm income + fruit income + plant income

While smaller domesticated animals are kept to some degree (chicken, goats, swine ducks, and geese) generally they are not consumed on a daily basis. These animals are kept for security to fulfill religious obligations, or for their byproducts While there are fewer restrictions on keeping domesticated animals, tsetse fly is still prevalent and restricts any beef production

Soils in this region are generally fertile, and inhabitants are more confident in their agricultural abilities than hunting abilities However biomass reproduction in this area is low, and generally the closer into the forest the less fertile it becomes. This area has more pastureland available and is also more populated Farmers in this area maintain a higher diversity of subsistence crops than those in the category one villages There is less emphasis, however on commercial crops than on subsistence crops (Table 7-2) Due to the diversity of subsistence crops informants from category two villages are able to supplement their income by marketing any excess produce Despite their lack of revenue in commercial crop production (Table 7-3), the added revenue is reflected in total revenues (Table 7-4).

Category Three Villages

The third category of villages is furthest away from the core forest (Ejagham) This category has better access to roads and larger markets than the other two categories. Category three villages rely more on cash crops and subsistence crops than on wildlife consumption (Tables 7-4 and 7 1) However ,traffic in bushmeat is still a component of consumption, but it is generally exported to other markets as a commodity Domesticated animals are also easily obtained and maintained

Table 7-3 Total Revenues in Korup Region 1999 2000

Category	Group	Total Revenues in Korup (Total income variable used)[35]		
		Total Income (CFA)	N / SD	Max (CFA)
One	Oroko/Korup	21,218 7	23 / 69472.4	335,000
Two	Oroko	5984 28	35 / 16973 24	81,000
Three	Ejagham	9 110.87	23 /13015 64	54,500

Cash Cropping in Good Years and Bad

Evaluating the successes or failures of the year's cash crop harvest is likely to be undermined by who has asked and how it was asked As would be expected, when asked about the value of the current crop yield, some respoadents became apprehensive about disclosing any information concerning their worth While for the most part respondents were helpful in evaluating their crop yields during the first phase of the evaluation some informants felt that, if they undervalued their actual yields they might receive some type of benefit of food aid from an aid project, exclusively from other informants

To control for this behavior during each interview it was made clear that this survey was not at all affiliated with any aid project or the Korup National Park Project, and that informants would not receive any aid or advocacy as a result of answering these questions This helped to discourage answers biased toward expecting aid, but most of the informants still believed that if an American came that far out to visit them, some benefit would come of it

All the informants questioned said they cultivated some sort of cash crops to some degree Regionally cash cropping was diverse Coffee, cocoa, and palm were the primary cash crops grown Except for cocoa men almost exclusively cultivated these crops Secondary cash crops were more diverse Some informants maintained that plantains,

[35] Total income = wage income + farm income + egg income + animal income + fruit income + forest income + game income + plant income + remittances

bananas, cassava, yams, oranges, mangos colocasia, and melons were their main cash crops but these crops were also used for subsistence as well

Table 7-5 divides the most important cash and subsistence crops regionally The most significant cash crop for most of the villages listed in all regions is cocoa The village of Ekundu-kundu lists palm oil as its most significant crop because of the relatively recent change to cropping activities from mainly hunting activities The Korup project has intensively promoted cash crop production in Ekundu kundu by offering them new land, equipment, and palm saplings Coffee had been an important cash crop however its value as a cash crop is declining. With the exception of plantains, the remaining crops are generally used for subsistence These are sold for cash to passing travelers, however there is no large-scale attempt at anything further

Table 7-5 Important Cash Crops Among 7 Villages in the KNP Zone

Category	Villages	Cash crop 1	Cash crop 2	Subsistence crop 1	Subsistence crop 2
One	Fabe	Cocoa	Coffee	Bananas	Plantains
One	Ekundu Kundu	Palm Oil	Cocoa	Colocasia	Plantains
Two	Toko	Cocoa	Coffee	Akwara	Plantains
Three	Abar	Cocoa	Coffee	Cassava	Bananas
Three	Mghagan	Cocoa	Coffee	Cassava	Colocasia
Two	Meangwe 1	Cocoa	Coffee	Cocoyam	Colocasia
One	Meangwe 2	Cocoa	Coffee	Bananas	Plantains

The importance of cash crops and subsistence crops varied regionally (Table 7 5) The results were established through the use of village focus groups within each village

and through the use of individual questionnaires that focused on the types of crops harvested regionally and the space or acreage devoted to them

Methodology: Variables Individually Defined

Wealth

For this study wealth is defined as all household savings plus all material wealth of each of the informant households. Material wealth would include all farm equipment, radios sewing machines, gas stoves, and all farm animals such as goats, swine sheep chickens ducks and dogs. The value of each item is estimated according to its general market value of the day. The total sum of wealth has been added and then generated as an individual variable illustrated as a unit of measurement.

Table 7-6 Per Capita Wealth Category One Villages in KNP Zone 1999 2000

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Wealthnow	23	49 966.17	74,018.79	0	30,5990

The mean wealth per capita for villages in category one is 49 966.17 CFA (Table 7-6). This is higher than the mean wealth for category two villages, (26 5501.7 CFA Table 7-7) and category three villages (24 594.51 CFA Table 7-17).

Table 7.7 Per Capita Wealth Category Two Villages in KNP Zone 1999 – 2000

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Wealthnow	23	265 501.7	623382.5	0	3 055,000

Table 7.8 Per Capita Wealth Category Three Villages in KNP Zone 1999 2000

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Wealthnow	37	24,594.51	47372.18	0	193.000

Gross Cash Crop

Gross cash crop revenue is defined as all income derived from farm income, fruit income and plant income combined. Farm income is all income from crops harvested by households and sold at market price. Fruit income is all income derived from selling fruit

products at market price. Plant income is all income derived from plant products foraged out of the forest and sold at market price. Each month informants were asked to calculate the total revenues derived from various cash crop incomes.

Category three villages had a monthly mean income of 7 841 3 CFA for gross cash revenue (Table 7-11). This is higher than category one villages with a mean monthly income of 6,257 6 CFA and category two villages with mean monthly incomes of 3 488 4 CFA.

Table 7-9 Per Capita Gross Cash Revenue For Category One Villages KNP Zone 1999 - 2000

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Cash crop	23	6,257 609	20119 18	0	95,000

Table 7 10 Per Capita Gross Cash Revenue For Category Two Villages KNP Zone 1999 2000

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Cash crop	39	3,488.4	13041 33	0	78000

Table 7 11 Per Capita Gross Cash Revenue For Category Three Villages KNP Zone 1999 – 2000

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Cash crop	23	7,841.304	12,662 96	0	52,000

Cash Value of Production

Total Income

To determine the total cash value of production, a combination of all production income sources is calculated. This includes income derived from wages, farm production, egg sales, domestic animal sales, fruit sales, forest income, bushmeat income, foraged plant income, and remittances.

Table 7 12. Per Capita Total Income For Category One Villages 1999-2000

Variable	Observations	Mean (CFA)	Std. Dev.	Min	Max (CFA)
Tot Inc	23	21 218.7	69472 4	0	335,000

Table 7-13 Per Capita Total Income For Category Two Villages 1999-2000

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Tot Inc	35	5,984.286	16973.24	0	81,000

Table 7-14 Per Capita Total Income For Category Three Villages 1999-2000

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Tot Inc	17	24,944.12	80189	0	33,5000

Category three villages had a total mean monthly income of 24,944.12 CFA (Table 7-14). This is higher than both category one villages (Table 7-12) and category two villages (Table 7-13).

Gross Cash Value For Forest Products

The variables measured for the gross cash value of forest products are a combination of the mean monthly income of forest income, bushmeat income, foraged plant income and fruit income. Category one villages had a monthly mean income of 12,327.17 CFA (Table 7-15). This is higher than category two villages (450 CFA) and category three villages (2391.304 CFA) combined (Tables 7-16 and 7-17). This suggests that category one villages depend more on the forest, consequently extracting more resources than the other village categories.

Table 7-15 Per Capita Gross Cash Value of Forest Products KNP Zone 1999 – 2000 Category One Villages

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Grossforest	23	12,327.17	46325.54	0	221,000

Table 7-16 Per Capita Gross Cash Value of Forest Products KNP Zone 1999 – 2000 Category Two Villages

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Grossforest	39	450	2,424.41	0	15,000

Table 7-17 Per Capita Gross Cash Value of Forest Products KNP Zone 1999 – 2000 Category Three Villages

Variable	Observations	Mean (CFA)	Std. Dev	Min	Max (CFA)
Grossforest	23	2,391.304	5,640.673	0	25,000

Land Tenure

Traditional

Traditional landmarks and rivers in proximity to villages mainly determined the village land boundaries and crop boundaries. Individual villages may lay claim to such landmarks as waterfalls, characteristically different rock strata, significant boulders, rock slabs, or cliffs. Due to these natural landmarks, villages differed in size and dimension. Historically there has not been any official ownership of land in this area. People in this area recognize "traditional" territory. Villages occupy land considered traditionally theirs. However, in 1896 the German colonial administration declared all "unoccupied" land to be German Crown land, and subsequently British and French colonial administrations maintained this arrangement. These land tenure policies have survived virtually intact today.

National

Currently the national legislation governing land tenure in Cameroon defines three distinct categories of land: private land, national land, and state land. The main distinction between that of state and national lands is that national land includes all land that is neither private nor the direct property of the state or other public bodies. Additionally this national land may be occupied with houses, farms, plantations, and grazing land, manifesting human presence and development. It can also be free of any occupation, ready to develop in accordance with state regulations. Private owners may register this land to develop. This effectively encourages farmers to develop (usually by clearing) unoccupied (forested) land to gain title to it (Master Plan 2002). Lengthy bureaucratic procedures are usually required to obtain any type of official certificate for

owenship and in practice relatively few rural communities do, although better-educated or affluent members of rural societies often do. In such areas, the traditional authorities that arbitrate in the settlement of land disputes often allocate land, in spite of official certificates issued by the state

Korup

Korup Park falls within the state land category Prior to the establishment of the park, part of the land formed the Korup Forest reserve within which the villagers who are there now were given the right to live, farm, and hunt in specially demarcated enclaves within the reserve However, with the establishment of the park, the legal basis for the enclave was removed Now these villagers have no right to farm, live or hunt anywhere in the park

Most of the land around the park is in the national land category Theoretically, the village authorities administer its use Each village claims a traditional territory and primary although not necessarily exclusive, rights to its land and national resources It is projected that the people of the community normally live, farm, hunt and gather within their own territory People from other territories are free to hunt in a territory other than their own if they are passing through it, but have to ask permission for anything more than a casual hunting or gathering expedition.

Although not formally certified it is understood that each tribe or village in the Korup Zone has a recognized territory As can be expected tribal or village territories are not mutually exclusive And specific tribes do not exclusively populate villages Therefore territories do not exclusively belong to a tribe For example, Fabe is an Oroko speaking ethnically Bima village But there are Korup Bataeaga and Ngolo people living there as well Batanaga and Ngolo are Oroko speakers, but Korup are not Land

surrounding Fabe is considered open territory, or village territory, rather than Buma territory. This is possible because of the historic, linguistic and cultural similarities within these mainly Oroko groups. Nevertheless, it is not generally acceptable for whole communities to establish themselves outside their own unofficial tribal area, unless relocated by the government.

The Korup groups are more exclusive than the other groups. Generally only Korup people live in traditional Korup villages. This might be due to the belief that some traditional groups feel that they only have rights in their traditional areas.

Individual land rights are inherited mainly through the male line. Both men and women may receive land this way. If one is new to an area, then the chief of the village may accord land. First the land has to be determined to be clear from prior claim. Once it is cleared for cultivation, it is claimed. Land claims generally do not lapse with time. If the land is left fallow for a long period of time, the land may still be reclaimed later. In some cases, if the land is left fallow for a long period of time, and there is no inheritor in the region, the land transfers back to the village chief until a new claim can be made.

People moving into a tribal area not their own, and wanting to claim new land, may either rent it or buy it. Land that has no individual claim is considered communal and all members of the local community may have equal rights to it and its resources.

Ownership

Average land ownership is illustrated in Table 7.18. Category two and three villages generally had more land in larger plots. These villages are further away from the National Park, and generally had more of a relationship with subsistence agriculture than with hunting. These villages are also less restricted in clearing new land, as they are deep in the support zone rather than adjacent to protected area. Villages in category one are

closer to the national park and had smaller sized plots, but more of them spread out in various locations. Ekundu-Kundu, a resettlement village, had traditionally depended on hunting as its primary occupation. However, with the move, plots of land were given to all members of the village to lessen their dependency on hunting.

Table 7-1E. Average Land Ownership of Korup Park Area villages 1999 - 2000

Categories	Villages	Range	Average hectares	Average plots	Average HH size
One	Fabe	0.5	1.5 ha	2	9.75
	Ekundu Kundu	1-3	1 ha	2	8
Two	Toko	1-2	1.9 ha	1.5	8.7
	Mungwe I	1-2	3.4 ha	2	6.2
Three	Abat	0.5	3.6 ha	2.1	10.2
	Mghagati	1-4	3 ha	2	8.7

Plots vary in size and may not necessarily be in proximity to another plot of land. Plots are divided at the discretion of the farmer. Generally there are one or two plots for subsistence crops and then one more for cash crops, such as plantains or bananas. The subsistence crops are intercropped with several varieties of food crops. The cash crops are generally left mono-cropped. Both men and women may have land. On average, women have two to four plots of land. The size may vary from .25 square meters to one hectare. Men have between two and five plots of land. The size of these plots also varied. Generally men had plots from two to ten hectares (Table 7-1E).

Total Income for Forest Products and Other Sources, in Good Years and Bad

There is a broad variety of forest products that contribute to the total income of rural villagers. Just as broad are the income patterns based on these products and their

variability within the villages Except for Fabe within the category one villages, the monthly income of all other villages from farming exceeds all other revenue (Table 7 19) For Fabe hunting created the most lucrative income averaged per month Villagers of Ekundn kundu also had high revenues from hunting, however this village is directly in the national park and hunting has been their primary occupation, theoretically until resettlement Farming revenue had been subsidized in this village by international aid. This enticement was part of an effort by the Korup administration to create a farming infrastructure in the resettled village in an effort to offer alternative income strategies to cnt back on the Ekundu kundn's dependence on hunting. Hunting is still the second most profitable source of income for residents and on average the most lucrative

The second most profitable source of income for the residents of Fabe is farming (Table 7-19) The regional government and the Korup Project are actively encouraging farming and discouraging hunting activities However hunting will remain an important part of the food and cash subsistence strategy Two reasons for this are that, for the cost hunting is extremely lucrative, and bushmeat is the only source of protein for rural residents living around the Korup Forest and its support zone Unless other alternatives are actively promoted and accepted by the rural communities, hunting will remain a primary source of protein and consequently income

Except for the village of Ekundn, income from non timber forest products is low across all categories Non-timber forest products have a low retail market value Women collect these products to use either for household consumption, or to sell in rural markets These products are seasonal and common to all rural households, so their marketability is low (Table 7-19)

Table 7.19 Per Capita Income (CFA) for Villages in the KNP Zone 1999-2000

Variables	Category one		Category two		Category three	
	Fabe (1)	Ekundu (2)	Teke (3)	Meangwe (4)	Alati (4)	Mbegwi (5)
Total Income	N20 / 7,520.5	N3 / 112,500	N10 / 2,441.7	N17 / 9 735.3	N9 / 13,666.7	N10 / 2,441.7
Non-Timber Forest Products	N20 / 500	N3 / 5,333.3	N22 / 113.6	N17 / 882.3	N9 / 1 111.1	N14 / 714.3
Hunting	N20 / 2 165	N3/ 6 788	N20 / 0	N17 / 0	N9 / 1,388.9	N14 / 250
Farm Income	N20 / 1 618	N3 / 25 000	N22 / 1 681.8	N17 / 4 794.1	N9 / 8,922.2	N14 / 4,360.7
Remittances / Dash	N85 / 824	N6/ 0	N22 / 322.7	N17 / 529.4	N9 / 355.55	N14 / 714.3
Wage Labor	N20 / 350	N3 / 3,000	N10 / 0	N17 / 3,529.4	N9 / 0	N14 / 0

Remittances are found to be low across all categories. This is not a dependable source of income and comes in irregular forms. Remittances may be in the form of cash donations, food and alcohol or household products. All remittances were converted to cash equivalents and averaged monthly over the course of the year.

Wage labor is also low across all categories. On average, Ekundu and Meangwe had higher wage labor revenues because these two villages have more infrastructure and support due to large development contributions from the Korup Project. This has provided more opportunities for rural farmers to earn steady cash income. Other villages in the region have not benefited from this arrangement.

CHAPTER 8
RURAL CREDIT IN THE KORUP PARK ZONE

Introduction

Chapter eight defines the various forms of available credit found in Cameroon and then found locally within the Korup National Park zone. This chapter highlights the implications of credit and its use in rural areas by detailing the significant types of indigenous credit schemes and the local availability of formal and informal credit.

Empowering Local Communities / Credit

Credit is often considered a key element in the modernization of the rural sector. This is part of an effort to stimulate rural development and self-reliance. Not only is credit expected to remove financial constraints, but also to accelerate the adoption of new technologies (Thikkurajah 1994).

The more limited a households' possibilities are to pursue former strategies of subsistence (e.g., cash cropping, marketing, agriculture), the more important it becomes to access the services of local savings, credit, and insurance markets for smoothing income and consumption (Zeller et al. 1995). Evidence from the survey villages suggests that villagers depend on the cultivation of food crops and the exploitation of neighboring forests for subsistence and for some degree of cash income generation. Unfortunately, numerous factors relentlessly limit farm production and raise issues of uncertainty, risk and vulnerability. These factors include access to markets, historically unpredictable price fluctuations for agricultural produce and the important non-traditional/timber forest products, frequent pests and diseases, crop loss dne to wild animals, and the use of unimproved crop varieties. Many

of these conditions emerge as dynamic restraints limiting production at the farm level for all rural farmers

The rural development program for the Korup Project attempts to integrate both the protection and management of the park into a comprehensive plan emphasizing its development as a scientific, conservation, and eco-tourist attraction Meeting the needs of the people living in and close to the park is also seen as a priority An effort to integrate local participation in the development of these goals has been a missing component in the management plan to empower all the local communities affected by the Korup Project

The Korup Project initiative has many biases that have served to limit the understanding of the needs of these rural communities and environments and limit the implementation of projects and programs. Some of these biases can be characterized by Chambers model in "Rural Development Putting the Last First "(1983) His research suggests that limitations on understanding are a product of factors including what he terms "tarmac bias ', referring to the way in which bureaucrats academics and journalists the world over rarely venture into remote areas, "person bias", resulting from the tendency to speak only to influential community leaders and "dry season bias" which comes through visiting rural areas when travel is easiest (Elliot 1994 Chambers 1983)

The people of Korup Park Zone have the ingredients for change and adaptation to the new environmental challenges that now face them Having project managers meet them on a level field and understand their goals and dilemmas in this new atmosphere of conservation rather than oppose it as an effect of drastic change in their rural lifestyle can help to empower both groups

In the face of successful conservation efforts and despite a reluctance to define what success is empowering the local communities within the Korup Park Zone should be the ultimate goal of any rural development within the area. A critical element of the Korup Project is the need to teach people how to manage their own resources (Ministry of Plan and Regional Development 1986). This includes the full management of all their resources including domestic and undomesticated animals.

Another key element in empowering local communities is to support indigenous informal financial groups. Informal financial groups are popular in Cameroon. Studies indicate that more than 70 percent of the population belong to informal saving and credit groups (Schrader 1989, 1996; Warrington 1958). Evidence also suggests that indigenous financial groups account for about 54 percent of the total financial savings and provide 27 percent of all private loan grants (Schrieder and Cuevas 1992). This can be seen simply as a basic risk insurance that helps smooth consumption during rough periods and is fundamental in an effort to stimulate rural development and self-reliance.

Function for Credit

Culture and credit are irreversibly interwoven, and integrated into the subsistence lifestyles of the people of the Korup Park Zone in Cameroon. This dependence on credit and access to credit is integral to the Cameroonian social system of community building and bonding. In spite of a promising and hefty formal financial banking system in Cameroon, the lack of access to sufficient formal savings and credit for the vast majority of Cameroonians is blatantly apparent. While formal credit systems do exist and are increasingly available to some sectors of the Cameroonian economy, it is still barely accessible, approachable or

affordable to the vast majority of Cameroonians [56] Regardless of a weak formal lending program and a lack of effective rural access, Cameroonians do have experience in borrowing and lending at the rural community level Informal financial groups thrive, despite their insecurities or formal assurances, in both rural and urban settings They are widespread and very popular

Many rural households rely on narrowly defined informal financial groups and where available on credit unions to obtain minimal financial and insurance services However informal credit institutions, while prevalent in all sectors of society, transcending cultural littoral and political borders are not completely reliable or always accountable in a legal sense (Schrieder 1996)

In light of this the formal credit sector has attempted to integrate informal strategies of approaching rural economies with the protection theoretically afforded to formal savings This has resulted in the increased popularity of credit unions across rural Cameroon The result of this achievement has affected rural Cameroonians in indirect ways The majority of rural Cameroonians do not have the sufficient disposable cash necessary to deposit in a rural account, but leaders and treasurers of local rotating credit cooperatives do They have the responsibility of safeguarding informal credit arrangements, some of which are even held up by law The proliferation of rural credit offices affords a new security for managing money

[56] Most formal banks in Cameroon have minimum deposit requirements that fluctuate and may be in excess of 100 US dollars, plus a monthly fee that increases if a minimum deposit is not met There are also restrictions on withdrawals to minimize the flight of money and no federal deposit insurance mechanisms

Formal/Informal Financial Systems

Blaming the borrower[57]

Lending is risky and risk arises from uncertainty or immediate need. There is ample evidence that lending to small farmers carries unusually high risks and is far too expensive for commercial banks that rely on mobilized public deposits for their business. The high cost of screening the large numbers of small borrowers of doubtful creditworthiness and the evaluation and control of numerous small loans dispersed over distant areas makes banks or commercial lenders shy away from lending to smallholder farmers (Thillairajah 1994).

In a rural based economy such as Cameroon this partiality can leave small farmers, as well as all other individuals who depend on or require credit for investment operation expenses or for just smoothing consumption during tight periods at a loss. It is easy to blame the borrower for this lack of support, however, according to O Donnell (2000) credit programs primarily fail not because of the borrowers but because of the lenders.

Most borrowers, anywhere in the world, will avoid repaying their debt if they can do so with relative impunity. Church based credit programs are particularly prone to this problem. Debtors will often test a lender by saying that they are too poor to repay. If a lender forgives the debt or allows the debtor to stop making payments, the word quickly spreads through the community and the "credit" program soon becomes a grant program (O Donnell 2000). This is what happened in Korup.

Rural Lending in the Korup Zone

The Korup Project initially experimented with a credit program and advanced small amounts of credit to individual villagers for rural start-up projects. It was quickly determined, however, that the program would operate at a loss and the money would not be returned

Villagers said they were too poor to repay and there were no real repercussions for defaulting on the loans. This program became a grant program and it was quickly ended out of frustration.

Both formal and informal financial systems in Cameroon have suffered greatly in part due to the loss of public trust in formal institutions of banking and public credit. This is not only a financial dilemma, but a social one as well. In addition, Cameroon's formal financial sector is underdeveloped and almost non-existent in rural areas. Furthermore, its financial market shows the dualistic structure of a formal and an informal sector, a characteristic of most developing countries (Schrieder 1996).

Informal savings and credit seem to thrive in the rural areas around the Korup National Park, while formal systems are scarcely represented or trusted. The informal, village or ethnically based, institutions that serve to administer and account for the credit systems display a unique formality mimicking formal finance institutions. Their influence is represented beyond formal financial boundaries and more along regional and ethnic precincts. These informal systems in turn are completely outside the control and influence of any formal institutions (Schrieder 1996).

Credit arrangements between informal financiers and patrons are conducted face-to-face. The patron and financier are tied to a community based on social networks and usually have multiple relationships with each other outside their financial relationship. (Schrieder 1996). Because social networks between the participants are linked politically, ritually, and often even through kinship, creditors and debtors are always informed about the economic and social standing of each other. This seems to be the key element for success, unlike formal

[57] See Figure 9-4 Credit Matrix

credit programs that were attempted by the Korup Project People were more likely to payback their own village organizations and neighbors who are in the same social situation than to payback foreigners who represent foreign organizations that will quickly forgive debt without social repercussions or damage to reputations

The advances administered by the Korup Project to local village participants were originally considered loans, but soon became grants. Participants believed that this money was really owed to them The project had a responsibility to development and these advances were seen as an ingredient to that higher goal In an understandable comparative realization of how some villages received more goods and services from the project than others this was a way to take what you could get And any advance was not really seen as a loan, but rather some type of repayment Since the Korup Project could not offer any social accountability or legal repercussion for non payment word soon spread, and many people defaulted intentionally without compunction

Conversely in Cameroon people are generally expected to participate in some type of lending institution It is tacitly understood that people who do not participate in any informal savings and lending association have a subjective reputation in their community, or cultural group Almost 80 percent of all adult family members in rural households participate in at least one financial group the most common form being the "djanggis" (Thillarajah 1994) Here, informal credit can even be regarded as an element of a larger chain of reciprocal relationships among neighbors or ethnicities This can be considered a new approach at looking at reciprocity, where informal credit or services are integral to smoothing consumption during lean periods. However defining, measuring, or estimating this type of reciprocal relationship may be difficult

Reciprocal relationships expressed through informal credit, may come in the form of sharing information services goods or physical assets This relationship may be displayed over a short or long period of time Households or individuals may take years to return goods, services or some equivalent form of return as part of a longer chain of exchange To any outsider any item given or service performed may resemble a gift, but may actually be a form of a longer term reciprocal transaction

As credit may be an element of this reciprocity chain credit can therefore be used in an amount of funds required or received by a farmer female head of household or an entrepreneur for investment for consumption and [or] operational needs For the sample in this survey, distinctive and regional cultural features and degrees of accessibility seem to texture credit Due to these qualities credit and access to its variations are malleable to the group or individual This malleability offers a progressive dimension to informal credit and its development and sustainability in rural or poverty stricken areas

Niche Credit

Most groups surveyed provided both savings and credit services to their members A few groups however functioned only as depository organizations while a few others acted as investment groups i e lending outside the group at commercial rates of interest (usually between 5 and 10 percent monthly simple compound) or investing in physical assets that provide a return to the group members (e.g flour mills or rural mass transit)

Because of the social importance of participating in rural lending groups, Cameroonians have adapted, creating a dynamically evolving niche market in rural credit Despite the insecurity of formal systems this niche has begun to shine through the partiality of Cameroon s farmal credit systems and is bridging the gap in accessibility to and

variations of credit In only the most general characterizations are there two systems of credit in Cameroon considered formal and informal

Formal Financial Systems

In terms of per capita income growth and production growth rates, Cameroon used to have one of the most successful economies in Sub-Saharan Africa Characterized by the World Bank as a "middle income country" Cameroon's economic progress was mainly observed during an economic growth period between the 1970s and the 1980s (World Bank 1991).[58] By the end of 1994 things had changed

Cameroon's formal financial system is supported by the franc zone system It is an important element to consider because it fuses the economic relationship between Cameroon and France and the relationship to the other franc zone member countries. With the rest of the world, trade linkages are then established due to the full and fixed convertibility of the exchange rate. The common currency the Franc CFA is theoretically fully convertible into the French Franc at a fixed exchange rate This fixed exchange rate had been 50 CFA to 1 French Franc up to January 11 1994 After 45 years, the members of the Communauté Financière Africaine (CFA) devalued the Franc CFA by 50 percent. The fixed rate of exchange is now CFA 100 to 1 French Franc

By settling on such a drastic devaluation the franc zone's two central banks[59] hoped to ward off any speculation about repeated devaluations (Economist 1994 Schneider 1996) [60]

[58] World Bank 1991 Report 9048 CM Staff appraisal report- Republic of Cameroon – Food Security project Washington D C USA World Bank Agricultural Operations Occidental and Central African Department

[59] Along with the six member countries of the Central Bank of Central African States (BEAC) the seven member countries of the Central Bank of West African States (BCEAO) belong to the African franc zone. These are Benin Burkina Faso Le Cote d Ivoire, Mali Niger Senegal and Togo

[60] N.N 1994 CFA-franc zone: France retreats from its empire. The Economist (January) 47

Eventually this decision may lead to sustainable growth due to the positive stimulus of the franc zone trade balances However those who might ultimately benefit are the exporters and then indirectly the farmers who produce exportable cash crops which have not been very competitive in the world market for the last number of years Conversely larger parastatal farm conglomerates are taking their increasing share of export profits, leaving the rural private Cameroonian farmer progressively disadvantaged in cash crop trade and exchanges

Informal Financial Systems

Durables

According to O'Donnell (2000) small farmers in rural areas often have much more of a liquidity problem than a credit problem After a harvest, most small farmers who do not have access to a savings account either keep their money safely hidden under a mattress or they buy additional farm animals jewelry or other durables (radios, hunting gun, wire etc) that can be sold when cash is needed. Cash under a mattress is a temptation for increased consumption but is eroded in value by inflation Animals jewelry or other durables cannot always be converted into cash and it is not possible to sell half a cow when only a small amount of cash is needed (O Donnell 2000)

Local Solutions for Local Problems

It is the small farmer s liquidity problem that keeps rural moneylenders in business Regardless of the positive or negative connotations that characterized money lending, much of the perceived demand for micro-enterprise is a reflection of this liquidity problem (O'Donnell 2000) Yet the problem can also be alleviated through access to a dependable savings account or a theoretically semi accountable djanggis ' group, where a portion of the harvest surplus can be stored to meet short term liquidity needs Existing djanggis in the Korup Park Zone can act as a credit union that offers only savings facilities to its member

villages and then pinces these svings In secure governmental or project bonds Using formal guarantees rather than supplanting informal arrangements and relationships offering this type of credit would continue to rest in the village hierarchy or local djanggis representation This would secure the djanggis offer accountability foster mutual trust and would very likely find a large demand for its services especially in the rural areas where access to other forms of savings is very limited In all of the six villages where a survey regarding community infrastructure was conducted informal financial groups operated In contrast, the use of formal financial groups was scarce

Types of Credit and Use

Djanggis

Common to the rest of Cameroon, djanggis groups are widespread and can be found in every hamlet village or town in the Ndian Division These groups are formed from various motivations in different degrees and serve diverse customary or financial objectives Nevertheless all djanggis groups pursue one clear common goal That is the development of individual members through financial assistance or mutual help The various djanggis groups found within the Ndian Division can be dichotomized into two types – thrift and credit djanggis and labor-orientated djanggis

The functions of the thrift or credit djanggis groups are to provide credit to individual members with limited interest of not more than five percent Credit is usually on a short term basis, not exceeding six months. Funds are accrued through contributions made by the members of the group Amounts contributed to the fund can vary over broad amounts. This will be discussed more in detail in the next secoon

The labor djanggis are mainly working groups Members either hire labor or participate to help other members of the group during peak harvest periods or when a member is unable

to work for any reason usually due to sickness or migration These formations can be age based or strictly reciprocal arrangements

Micro Credit and Rural Credit in Korup National Park Area

Thrift & labar djanggis

There are generally three types of credit available to rural villagers djanggis or rotating credit, credit afforded to participants in a societal meeting and credit in the form of village credit. Many in the Korup Park Zone no matter their social or economic level participate in one form or another of djanggis The system is a cash or credit build up device It also has a possible corollary effect as a working safety net Often erroneously compared to a tontine it is simply a periodic cash payout system, where participants agree to set aside a certain amount of funds in collusion with a group of other participants

These associations can be age-based or ethnically based Participants generally have their own criteria for admittance to the group which may be highly exclusive The amount invested in the system can be very small or very large, depending on the resources of the group the participants and the conditions There is a fundamental difference between the djanggis and the historically French tontine scheme developed by Lorenzo Tonti where funds were doled out to the last survivor of the group

In the djanggis group generally a lump sum is doled out once a month to a different contributor That contributor is also required to host a social gathering where food and drink are amply distributed The better the party the more enhanced the contributor s social standing becomes The only way members can increase their holdings above their own contributions in the djanggis is when the group lends credit to individuals within the group at a standard interest rate of fifty francs to the thousand

Another form of the same scheme is the labor djanggis whereby contributors form a trust in that if one of the participants cannot harvest a field or conduct a specific job usually related to agriculture the rest of the djanggis group will attend to the needs of the participant

The second form of micro-credit that is offered consists of funds made available through a "meeting This is different than other forms of the djanggis in that lump sums are not given out at a predetermined time The meeting is a recurrent convention where a varied amount of cash is set aside for future use when the need for instant credit arises Credit, or the contributor s cash is then handed back to the participant Lending follows the same guidelines as typical djanggis groups In some meetings however interest is not charged to members. For this scheme contributions can be different and intermittent.

The last scheme is the village meeting where if the village is adequately organized contributions gathered at village meetings are used as an emergency fund to lend to the population at large at the discretion of the entire population However this does not occur in all villages Loans are normally small and expected to be paid back as soon as possible By and large this scheme does not charge interest If the loan is not paid back at the appointed time a village executive committee has the right to foreclose on property of the individual and then recommend a public auction to recompense the village coffers This system is individually tailored to each borrower

The first two schemes are by and large limited to secret societies or intimate groups of associates within or outside of the village Admittance to a secret society may be contingent on any number of factors For instance, admittance may be contingent on age, social rank affluence and [or] access to resources

For each of these schemes there is an electoral procedure whereby the group votes officers in Usually there is an administrative secretary a vice president, a president and a treasurer In many groups, for security purposes, the treasurer is unknown to the general electorate and is voted in by the administrators of the group Due to the rural nature of the group usually the treasurer of the group hides the cash in a secret location within the village known only to the treasurer and possibly the president

This adds to the insecurity of the scheme Money may be unintentionally destroyed, stolen or just disappear There is rarely any real accountability to the contributors The police may be called in but generally this serves no compensatory function In effect there is no safety net for this safety net These schemes are often by nature exclusive in access and are not always dependable in times of need or even secure However they do exist to widely and are an important fiscal component element when we talk of safety nets available to rural villagers

Links to Credit

Most frequently found approaches to credit in Cameroon are these informal financial groups that are ubiquitous in rural and urban centers They are very popular and most rural and urban individuals rely on these local informal financial groups for even the most basic of financial and insurance services Wherever the availability of formal credit unions or banks exists there is still the social obligation to take part in an informal financial group for even the simplest necessities of social assurance and revolving financial needs

While informal financial associations provide basic insurance services they provide a social and cultural function as well Many of these groups meet on a regular basis to discuss cultural obligations or raise awareness of private dilemmas or local issues These groups also

assist as a repatriation service for members or associates of members who are far from their traditional area

The most frequent variations of these groups are the rotating savings and loan associations followed by non-rotating savings and loan associations, and then a combination of the two It is not a requirement that all members belong to all variations of the association Some members only associate with one component of the group, for example the rotating savings component or the credit component. Commonly among families various members subscribe to the range of activities the association offers and thus draw all the benefits they can from their group involvement

Depending on the activity contributions to these associations can be both flexible and fixed. In most associations contributions are flexible. This strategy insures that a member s contribution can fluctuate with his or her own available liquidity There are also cyclic contribution associations that depend on fixed donations This fixed amount is necessary to determine the specific availability of cash that is periodically given to various members of the association who may require credit.

In Cameroon these informal financial groups can be divided into four distinct groupings developed out of two classifications (Table 8 1), either rotating or non rotating (Seibel 1989 Aryeetey 1995) This distinction is determined by the goals established by the members of the group itself Aryeetey (1995) stipulates that members of rotating financial associations commit mutually for the sole purpose of accumulating and saving from a pool of funds while in the non rotating association these often combine general assistance in the form of cash advances to members in times of need as well as savings mobilization and lending

Table 8-1 Type of Savings and Credit in SW Cameroon

Types	Indigenous name	Description	Commitment	Benefit	Cycle
Type One	Djanggis	Rotating Savings Association	In rotating order each member pays a fixed amount	In rotating order each member receives a fixed amount	Cycle is determined when all members have received a full amount once
Type Two	Djanggis	Rotating saving and credit Associations	In rotating order each member pays a fixed amount	Funds are allocated to members and to a general fund used for small loans	Cycle is determined when loan is paid back with interest
Type Three	Djanggis	Non-rotating saving associations	Member pays fixed/variable amount at regular intervals	All contributions are collected and paid back to a member at a stipulated period	Cycle is determined when all members have received a full amount once
Type Four	Djanggis	Non-rotating savings and credit	Member pays fixed or variable amount at regular or irregular intervals with interest	A source of funds for loans, fees penalties business ventures	Cycle is determined when contributions are paid back at a stipulated period

In rotating savings and credit associations, members do not usually interact much with one another except to pay and receive contributions. At this time there may be a formal meeting where contributions are made and remuneration is paid out. For non rotating savings and credit associations members base their relationships with other members of the financial group on bonds of friendship, work, or cultural connections. These members often meet outside the associations of the financial group, and are often members of the same ethnic affiliation. Besides their fiscal obligations, members of these financial groups often have strong social ties to one another.

Monitoring, Supervision, and Enforcement of Credit Management

One uncertainty that is recurrent throughout all credit programs is how to ensure loan repayment. This is the incentive problem in credit administration. Monitoring of borrowers is one essential method of increasing the likelihood of repayment (Nehkum 1999). One of the causes of failure in state supported credit programs and other various allied state-supported schemes is a complete lack of [or the poor quality of] monitoring efforts (Okoye 1998).

In formal systems where there is the option of rural credit there is a complete absence of mechanisms for mutual scrutiny, and these markets generally do not exhibit any type of transparency They may also provide the opportunity for some surreptitious behavior, particularly by the staff of the lending agencies, which sometimes engage in rent seeking short-changing rural borrowers and diverting funds to their use or that of their friends (Okoye 1998) In the rural models observed in Korup Park Zone different participants monitor the market from varying perspectives. The more important of these monitoring relationships are as follows

- The villagers monitor themselves for adverse selections, moral hazard for the maintenance of their collective reputation as a group and for convertibility of the loaned funds Everyone is free to report the conduct of the other members at the group monthly meetings The participants use a chain guarantee system whereby default by one means default by all and all are equally liable This is one incentive for every member of the group to keep an eye on the other and alert the group's treasurer or president at the monthly meetings if they suspect irregular behavior
- In some groups the collateral value of a loan is also enhanced by the practice of swearing by juju a form of ritual co-signing
- Traditional rulers will monitor for restrictive contractual obligations against members of the group who reside within their village (and other negative repercussions of borrowing) and for consensus on land tenure and traditional obligations or practices

All of these elements work together to curtail the problems of adverse selection and moral hazard Adverse selection has a social cost (Stiglitz 1993) not only to risk and insurance market operators but also to the village and all other stakeholders

Social and Economic Shocks in Target Villages

Social and economic responses are as varied as the assortment of adverse shocks in villagers experience. When informants had access to formal or informal credit or any type of remittance they generally used that extra cash to mitigate any adverse or positive shock thereby in part smoothing their personal consumption

Over the course of a year 305 informants were questioned every month about the variety of adverse or positive disruptions they may have experienced...and in what capacity they used their available credit or remittance to mitigate the disruption. Twenty nine percent of the people surveyed used their subsidy to purchase food and twenty percent used their subsidy to pay various fees. These fees ranged from school fees to death fees, religious obligations and various village or secret society fines (Table 8.2)

Table 8-2. Remittance Responses to Shock in Koroo Park Villages 1999 2000

Informal loans	Frequency	%
Used it for food	63	29 30
Paid fees	45	20 93
Invested	17	12 09
Bought gifts (including ceremonies)	22	10 23
Gave it away	22	10.23
Nothing	13	6.05
Medical expenses	11	5 12
Built a new home	8	3 72
Lost it	3	1 40
Replanted	1	.47
Loaned money	1	.47
Joined a credit union	0	0
Put in the bank	0	0

The survey illustrated that twelve percent of the informants used their subsidies for investments. Informants used this cash exclusively for products meant for re sale or to support existing investments, for example a distilling operation or an "off-license" bar. Typically an informant also used this subsidy to purchase a large vat of kerosene from Mundemba in order to then retail the kerosene in smaller quantities within the village looking to develop substantial profit. Female respondents typically used this cash to purchase flour from Mundemba to make lucrative baked goods for sale in the village (beignets etc..)

Another investment that both male and female respondents reported as good was the purchase of bushmeat from local hunters After accumulating an amount suitable for bulk transport, customarily the villager would then repackage the bushmeat and sell it to middlemen in larger markets such as Mundemba or even Ekundu-Titi, some 65 kilometers away Buyers from larger cities such as Kumba, Limbe or Douala, some 100 kilometers away would seek out these middlemen bushmeat retailers at the regional markets They would purchase the rural stock outright and transport it to the larger cities. There the bushmeat would either be sold retail in the markets or directly to fast food street vendors Generally these vendors are women who operate under a tarp or in a stall adjacent to a market. Commercial sales, transport and distribution of bushmeat are strictly forbidden however the practice remains a lucrative commercial endeavor that is an important source of revenue for many Cameroonian women living in large and small towns.

In lieu of cash, bushmeat buyers also traded merchandise that had been previously requested by the hunters or distributors This merchandise would not normally be found in the rural villages Straight exchanges for cases of beer, ammunition whisky, or kerosene work to both the buyers and seller's advantage. If money were to change hands the village peddlers would use it to buy cases of beer or "afofo" (palm wine), and transport it to the village for resale at a higher price

There are two instances in Table # 2 where informants remunerated up to ten percent of their subsidies for gifts and for straight cash donations These are locally referred to as a dash " Villagers distinguish the meanings of gifts and dash donations Gifts are generally formal community, familial or social obligations Dashes are generally less formal and without discretion These gifts are either in the form of alcohol (palm wine whisky or beer)

cash or household products such as soap tobacco kerosene or baby powder The dash is a very important element in Cameroonian society respected and revered as a way to smooth things out

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CHAPTER 9
EXPLANATORY VARIABLES

This chapter focuses on the independent and dependent variables that constitute the original design of the proposal It will examine specifically available credit structures observed in rural villages and the results of the analysis that tested the linkages among credit, forest exploitation, and health Some ethnographic descriptions are included here only to depict variations or details of the variables The chapter concludes by outlining the importance of various forms of formal and informal credit and contrasts these variations with natural resource use.

Link Between Credit, No Credit and Shock Responses

Until recently, few students of development concerned themselves with financial activities beyond the range of formal financial markets Conventional wisdom held that these types of informal financial activities were comprised mostly of exploitive loans from usurious moneylenders and/or benign consumption credits loaned by friends neither of which promoted development (Adams and Fitchett 1992). Policy makers and economists occasionally worried about informal lending, concerned usually about its adverse effects, preaching against its evils, trying to regulate it, or developing credit programs aimed at supplanting it (Adams and Fitchett 1992) (See Figure 9 4). Recently, interest in the private sectors of developing countries has increased, leading to a clearer perception of the difficulties of many of the formal credit programs that have been introduced This has prompted many to re-evaluate old views about informal finance

Traditionally informal finance was viewed as a plague on poor people although large numbers of poor people used and benefited from their participation in informal financial markets (Schneider and Cuevas 1992, Adams and Fitchett 1992, Graham 1992) Depending on the type of credit available credit may produce ambiguous effects on actual health perceived health patterns of resource use, wealth and income The traditional view was that emerging credit markets with their high interest rates and bonds of indenture could chain indigenous people to hard toil that could possibly worsen their health (Murphy 1956) Despite the traditional beliefs of emerging credit's adverse effects Morduch (1995) maintains that, by allowing people to borrow when they get sick, credit may make it possible to keep food consumption from fluctuating and health from deteriorating Research in Asia suggests that access to a well functioning credit market improves health because it allows the sick to borrow and buy medication to pay for health care or to hire laborers to tend to their fields during bouts of illness (Godoy 2001 Amin 1997 Foster 1995)

Drawing on the debate and literature reviewed the following hypotheses are advanced forming the basis for this research There were two purposes to this study The first purpose was to assess whether villages with access to credit would

- depend less on the forest for their income
- show greater evenness in consumption because they would be able to isolate consumption from production,
- not be limited by household size in the amount of what they could produce because they would be able to borrow [or] hire workers and
- be less vulnerable to recurrent health problems because their consumption would be more stable

The second purpose of this study was to determine whether villagers without access to credit:

- used the forest (rather than credit) as a buffer after experiencing a shock to their household or during lean periods;
- changed their production (intercrop diversity) to self insure production,
- paid a premium in lost output (and lower income) relative to households with access to credit;
- experienced higher variability in income and consumption,
- experienced a wider and higher occurrence of health related problems relative to households with access to credit, and
- encountered more risk associated with health and welfare relative to households with access to credit

Over the course of one year (January 1999 to February 2000), three hundred responses were recorded each month in the survey. During the analysis stage all the responses were entered into an Excel database. Responses that were fundamental in determining the links between credit and shock to a household were then re-coded and tabulated in the statistical package STATA to facilitate the analysis. Preliminary analysis of the variables did not produce or display any statistical significant link between households with access to credit, or households without access to credit and any of the tested variables that are included in Table 9-1.

Preliminary analysis used chi^2 to determine significance a decision made by the Principle Investigator not to do regression analysis since no obvious relationships emerged. High standard deviations emerged compared to mean values. This was a result of high intra-cell variability and a low N

Table 9.4 Access to Credit versus No Access to Credit

	Credit			No Credit					All		
Variables	Obs	Mean	Std Dev	Obs	Mean	Std Dev	T	P	Obs	Mean	Std Dev
Hhsize	18	10.33	6.35	56	8.09	5.077	1.57	.1193	84	8.57	5.41
Savings	218	16233.26	58667.82	766	15873.97	120039.4	.0426	.9660	984	15953.57	100704.9
Land	202	200.67	1396.13	700	216.24	1448.66	1356	.8921	902	212.75	1435.32
FCFORIN	161	1357	2809	401	1389	2957	1148	.9087	562	1380	2913
Totinc	210	13121.5	70490.95	742	8696.79	36205.39	1.2307	.2187	952	9672.82	46008.33
Wageinc	211	2005.21	9514.42	746	980.81	8832.29	1.45	.14	957	1206.67	9007.32
Hdays	219	1.66	4.43	779	1.39	4.31	.79	.43	998	1.45	4.33
Medication	219	1053.42	3345.71	780	563.53	5180.024	1.32	.18	999	670.93	4840.535

FCFORIN = forest income + game income + plot income / totinc
Totinc = wage income + farm income + egg income + animal income + forest income + fruit income + game income + plot income + remittances
Hhsize = total households within survey
Hdays = total days ill within two weeks

Key Variables

Independent Variables

The variables tested in Table 9-1 are continuous variables. Access to credit is also an independent variable but is nominal and not continuous.

The variables are defined are as follows:

Household size (hhsize)

Savings (Savings) is all savings

PCFORIN (PCFORIN) is access to and amount of land (Land) and all income derived from forest use. PCFORIN income includes all hunted or trapped game converted from its estimated CFA value to the US dollar market value per kilo, all income derived from non-timber forest products (NTFP's), all income derived from subsistence and commercial crops produced within the forest, and its buffer zones divided by the total income variable (totinc).[61]

Totinc (Totinc) is total income variable and includes any and all wage labor income, any and all income from farm products such as the sale of eggs, or sales of domesticated animals, and any and all income derived from the sale of fruit, bushmeat, and forest products. Included within the Totinc is any and all income derived from products sold from farm plots, and any remittances that may have been accrued.

Numbers of observations are not consistent throughout all categories. This is due to several factors. Some interviews went unfinished, or respondents may have either dropped out, disappeared, and later reappeared over the course of the year.

Control Variables

Control variables included age, status, dependencies, land, village attributes likely to influence health, such as the availability of medical kits, distance from a rural clinic or nearest market town, and distance from the forest. Control variables also included dummy variables for each of the three categories of villages tested. A village dummy variable is a

[61] This variable is divided by total income to lend more weight to the value of its share as a part of total income, rather than the absolute amount.

binary variable that picks up all the unseen attributes of a locality such as environmental or physical conditions or status or membership in a secret society

Analysis of Explanatory Variables

The following section will provide an explanatory analysis of the key independent variables tested in all the villages surveyed. These are savings land forest income total income wage income sick days medication and cash cropping Independent variables were measured by their relative change when tested for the effects on the dependent variable Independent variables were measured against a household s access to or lack of access to credit, also an independent variable Eighty-four households were observed over the course of a year for a total of 999 observations Of the eighty four households observed eighteen had access to credit while sixty six reported they did not have access to credit The following sections will include a more detailed analysis of each of the key variables and their variations

Household

The variable household size (HHsize) represents the observations made of informants from households that have access to credit and of those that do not (Table 9 1) The mean of both credit and no credit categories demonstrates that within the sample there were more individuals from households that did not have access to credit Households with access to credit had a total of eighteen observations, while households without access to credit had a total of sixty six observations The average household size was 8 6, with the average age thirty five years old Average educational attainment was low It is skewed towards younger members of the household, with an average of six years of education Those households with access to credit had a mean size of 10 33, while those without had a mean size of eight

By using ch^2 to test those households that had access to credit versus those without access to credit, it can then be determined if there is a significant link between access to credit and household size In determining the significance of any measured variable in this study we chose a *P value* that must fall below *0 1* or be *>0 1* A *P value* of 0 1 (or *> 0 1*) represents a margin of significance within 90% of the tested population A *P value* of *0.2* represents significance within 80% of the tested population The *P value* for household size is 1199, therefore there is no significant link between access to credit and household size.

Savings

Table 9 2 The Significance Of Access To Credit To Accrued Savings

	Credit			*No Credit*				*All*		
Variable	Obs	Mean	Std Dev	Obs	Mean	Std Dev	T	H	Obs	Mean	Std Dev
Savings	718	16233.25	56667 6	266	15873.97	120039.6	043	965	984	15953.6	109704 9

Average villagers generally swap goods and services with one another but they do need cash to buy certain food products household supplies medicines and modern health supplies and tools They also need cash as a buffer when mishaps strike The relationship between available credit and increased savings can be a significant factor in smoothing consumption

Saving is a continuous variable There are 984 observations of individuals that have initiated or maintained to some degree liquid savings (Table 9-2) Each month informants were asked if any savings had been accrued Savings includes hidden money or money held in trust by another or money in a cash club.[62] The mean amount for total accrued monthly savings is 15953 57 CFA, equivalent to about 20 91 USD (Oanda June 26 2001)

[62] When possible these questions were asked privately Many female members of the household kept money hidden from other members of the household for emergency expenditures

Of the total 984 observations of rural villagers interviewed who claimed they had a cash savings 218 also claimed to have access to credit and had outstanding debt Those rural villagers with access to credit had a mean savings of 16233 25 CFA, or about 21 28 USD (Table 9-2) The remaining villagers without outstanding debt or access to credit, totaled 766. The mean monthly cash savings for this group is 15873 888 CFA, or about 19 00 USD. slightly less than those with access to credit.

An increase in savings could give an indication of whether there may be a significant relationship between access to credit and the rate of accrued savings In other words..do the households with access to credit have higher rates of savings than households without access to credit? This is important because those individuals or households with higher rates of accrued savings will have a buffer that can be a factor in smoothing out consumption during rough times

There were 984 observations made of households that stated they had some amount of savings for that month. Of this total 218 individuals reported access to credit ..or significant outstanding credit while 766 individuals stated they had some sort of saving for that month but had no access to credit This *P value* for this variable is 9960 For the P value to be significant, it must equal to less than 1 A *P value* of 9960 does not meet the requirements for significance of P therefore, there is no significant relationship between savings accrued and access to credit

Land

Table 9-3 The Significance Of Access To Credit To Ownership Of Land

	Credit			No Credit					All		
Variable	Obs	Mean	Std Dev	Obs	Mean	Std Dev	T	P	Obs	Mean	Std. Dev
Land	202	200.87	1396.1	700	216.24	1448.68	136	.8921	902	212.76	1436.32

Land is a continuous variable. Both men and women have access to land. The mean size of owned land is 212.7 square meters. Generally men had an average of five plots of land, and women had an average of two plots. Size was generally skewed toward larger pieces of land for men, 2.5 hectares, then for women, .5 hectares. Land cultivated by men was larger due to increased varieties of cash crops. Women's plots were smaller, and both men's and women's subsistence centered on extensive slash and burn cultivation, with more intensified farming either within the village or within its proximity (See Figure 3.3).

Over the course of the calendar year, there were 902 observations made of informants who stated they owned various amounts of land. Of those 902, 202 stated that they had access to credit (Table 9-3), while 700 of those informants stated that they had no access to credit. The *P value* determined for this variable is .8921. For the P value to be significant, it must be equal to less than 0.1. Therefore, access to credit is not a significant factor in size or amount of land owned by the informants.

Forest Income

The key variable measured in Table 9-4 was the amount of income derived from the forest. Informants consistently stated that income derived from the forest was an important factor for smoothing consumption during difficult periods. The mean forest income for all is 1380 CFA per month. This is low in part due to the seasonality and low commercial value of the specific products derived from the forest. Children living in the household collected these products and either sold them at market or used them for subsistence.

Table 9-4 The Significance Of Access To Credit To Income Derived From The Forest

	Credit			*No Credit*					*All*		
Variables	Obs	Mean	Std Dev	Obs	Mean	Std Dev	T	P	Obs	Mean	Std Dev
INCFORIN	161	1557	2809	401	1589	2995	1148	.9087	562	1580	2913

A portion of this variable is made up of Non Timber Forest Products (NTFPs) with very low commercial value however in collecting them older women and younger girls were able to contribute to some degree to the household The products derived from this activity are also considered supplemental income although they have no real commercial value, but rather household, or medicinal value (e g njangsangsa and bush mango)

These figures included income from all non-traditional forest products bushmeat and income from farm plots within the forest divided by the informant's total income When villagers were asked about the income derived from bushmeat respondents were reluctant to even admit that they were involved in the practice due to the confusion regarding new laws for hunting and trapping. The objective was to observe whether there was any difference attributed to those informants who had access to credit and the amount of income derived from the forest

There were 562 observations of informants who accrued this type of income Of the 562 informants observed 161 had access to credit while 401 did not. The *P value* of this variable is .9087 (Table 9-4) Since the value is less than 1 there is no clear significant relationship between those informants who had access to credit versus those who did not

Total Income

Table 9 5 The Significance Of Access To Credit To Total Income

	Credit			No Credit					All		
Variable	Obs	Mean	Std Dev	Obs	Mean	Std Dev	T	P	Obs	Mean	Std Dev
Totinc	210	45121.5	70490.95	742	8596.8	36208.4	1 23	219	952	9672.82	46008.3

The mean total income for both groups is 9672.82 CFA per month (Table 9 5) This variable measured the amount of an informant s total income This variable includes all wage income, all income derived from the sale of domesticated animals and their by-products (i.e. eggs) wage income fruit income bushmeat income income from farms monthly remittances (and dashing) This is a low figure because actual cash is generally a rare commodity in these rural villages Many of the components of the variable were converted to cash equivalents.

There were 952 observations made (less due to children w/o income sick/infirm and recidivism) of those who accrued any income (Table 9 5) Of those 952 observations 210 had access to credit, and 742 did not The *P Value* for this variable is 2187 This indicates that those with access to credit, a significant minority were not significantly more likely to have higher incomes than those who did not have access to credit or vice versa

Wage Income

Table 9-6 The Significance Of Access To Credit To Wage Income

	Credit			No Credit					All		
Variable	Obs	Mean	Std Dev	Obs	Mean	Std Dev	T	P	Obs	Mean	Std Dev
Wagein	211	2005.21	9514.4	746	980 81	8852.3	1 45	14	957	1200.67	9087.32

The variable wage income was determined by the amount of accrued wages an informant made in cash or in kind for work done between monthly interviews (Table 9-6) Of the 957 observations of wage earners 211 stated that they had access to credit, and 746

stated that they did not. The *P value* for this variable is .14. Therefore there is no significant relationship indicated between access to credit and wage income.

Sick Days

Mean sick days for all observations amounted to 1.45 per month (Table 9-7). A majority of the respondents considered themselves sick all the time each month pointing to a new scar festering wound or physical ailment. Since many of these respondents rarely traveled out of the village, no accurate diagnosis of their ailments could be determined. Nevertheless these informants suffered mainly from the effects of malaria, excessive alcohol consumption, malnutrition, onchocercasis and to some degree from tuberculosis. Although no conclusive figures were available many were also reported to be suffering from HIV/AIDS infections.

When informants were able to travel to a medical clinic or regional government hospital, health workers did not always fully disclose the degree or severity of an informant's illness. Furthermore, periodically health care staff were either prevented from explaining or did not explain to their patients their true ailments. Several health workers reported confidentially that up to thirty percent of some villagers might have the HIV/AIDS virus. Their belief was that disclosing this information might lead to panic and irrational behavior within these rural villages. This was due in part to the fear that infected people might be killed immediately out of fear or exiled from the village along with their entire families. Health care workers reported that, if a patient has a terminal infectious disease, precious resources and material means available to treat this case might then be diverted to a more worthy cause within the family or village. Informing patients of their terminal conditions might then accelerate their demise.

Local healthcare dispensaries were barely able to meet the demands of their patients As a general rule basic medications were not provided by the health care system Patients were required to provide all their own drugs and medical accessories including needles bandages tape instruments daily food bed sheets and gratuities for the health care staff Public health care facilities rarely had any medications or supplies on site although there were many private pharmacies in larger regional centers where medications could be specially ordered There were also several international NGOs that provided subsidized medical cabinets where some medications could be purchased.

Generally, family members would make the forty mile trek across the Korup Forest to the Nigerian border city of Calabar to purchase prescribed medicines and medical accessories Because Nigeria produces many generic equivalent medications medical supplies are significantly less expensive than in Cameroon where pharmacies import medications from France A cottage industry has developed comprised of border runners who can make a lucrative profit on special orders from Nigerian markets to find less expensive versions of requested drugs Consequently some of these drugs were purchased from street vendors in hot open marketplaces with no refrigeration facilities, or from traveling salesmen who often carried their entire inventory in unhygienic environments, with little attention paid to expiration dates and storage conditions

Table 9-7 The Significance Of Access To Credit and Sick Days

	Credit			No Credit					All		
Variables	Obs	Mean	Std Dev	Obs	Mean	Std Dev	T	P	Obs	Mean	Std Dev
Malaria	219	3.56	4.43	779	1.39	4.01	7.9	0.0	998	1.95	4.33

A key variable in measuring the hypothesis was an informant s perceived health The accumulation of days the informants specified they were too ill to leave their homes between

interview periods was a good indication of this determination Informants were asked every month how many days they determined they were too ill to leave their house in the past two weeks The variable illdays measures the number of days ill within those last two weeks Of the 998 observations 211 informants had access to credit and 708 informants did not (Table 9 7) The *P value* for this variable is .42. This indicates that there is no significant relationship between access to credit and number of days ill

This determination is significant because the hypothesis asserted that those who have access to credit would be able to smooth consumption during times of adverse disruption and therefore experience fewer days ill compared to those who did not have access to credit

Medication

The variable medication measures the amount of cash that the informant dispensed when someone in his or her household became ill Monies toward medications generally indicated western types of medication or supplies as opposed to traditional medication Traditional medication mainly consisted of some type of homemade alcohol-based remedy with additional forest products added. The informant usually collected most of the ingredients and therefore no real payments were made If there were any payments made for traditional medications it was usually given in kind, as a dash or gift for services rendered rather than for a specific medication

Table 9 8 The Significance of Access to Credit and Medication Purchases

	Credit			*No Credit*					*All*		
Variable	Obs	Mean	Std Dev	Obs	Mean	Std Dev	T	P	Obs	Mean	Std Dev
Medication	219	1053.42	3345 71	780	563 53	5180 02	1 32	18	999	670.33	4840.53

In total, there were 999 observations made. Of these, 219 informants had access to credit and 780 did not (Table 9.8). The *P-value* for this variable is .18. Since the *P-value* is less than 1, there is no significant relationship between access to credit and the amount of money spent on medications between interview periods.

Original Design

The original design of this research methodology was in part set up to observe rural mechanisms for coping with adverse or positive shock, access to formal credit and its effect on smoothing consumption during rough periods. The hypothesis of this study anticipated that access to credit would substantially affect both patterns of resource exploitation and health. However, the type of credit that was observed in these forest villages, and the analysis that noted the linkages among credit, forest exploitation, and health, recognized the importance of informal credit systems rather than the anticipated forms of formal credit.

The research methodology was designed to measure access or lack of access to formal systems of credit. In the absence of formal systems of credit, matrilineal informal credit systems flourished as a competitive replacement. Highly regarded and socially supported, these systems are a viable alternative substitution, or complement. It became apparent that informal credit was too important a factor to ignore.

Informal credit, due to its very nature, is more fluid and less easily observed, or recorded. Most of the transactions are made in secret and not recorded or else poorly recorded. Nevertheless, as a rural village institution, informal credit systems are every bit as important as formal credit systems are to areas that have access to them.

Modifications were made to qualitatively include informal credit, however as this study was a component of two larger bodies of research (Smithsonian CTFS and Dr. Ricardo Godoy, Sustainable International Development Program, Brandeis University), any

comprehensive modifications were regulated by the study's institutional rigidity which proved to be a constraint.

Review of Variables and Access to Formal Credit

After reviewing these variables and observing the *P-Values* it can be said that in the Korup National Park zone there is no statistical relationship that implies that access to formal credit can determine economic growth increased forest income, increased wage income or better health This null hypothesis refutes earlier assumptions that asserted credit could induce economic growth and favorable health with those that have access to credit versus those without access to credit (See Figure 4)

Figure 4 outlines two contrasting perspectives of formal and informal credit systems and their influence. The perspective is that of development or conservations The second perspective is that of local villagers

From the perspective of a development or conservation organization formal credit may have positive implications for insurance smoothing, investment development and conservation From this perspective, informal credit only has negative implications with its supposedly high and usurious rates of interest keeping villagers in perpetual poverty All six cells receive either negative or positive ratings from organizations

However rural villagers view formal and informal credit from another perspective that helps clarify the lack of statistically significant relationships between access to credit and the other independent variables shown earlier Agency assumptions about the relationship between formal credit and conservation or development are erroneous from the perspective of the rural villager Clearly from the perspective of the rural villager informal credit is integral to any insurance mechanism, smoothing, and investment or development incentive while formal credit is irrelevant because of its absence.

What is also evident from the data is that neither formal nor informal credit have much active or passive effect on villagers' conservation. There really is no formal credit available to villagers, since the previous attempt was cancelled because of the non-repayment of what the villagers perceived as grants. Villagers do not use informal credit instead of forest resources. Instead, villagers use both (complementary) safety nets. Therefore, although villagers appreciate informal credit, they do not perceive it as related to conservation (an empty cell in Figure 4).

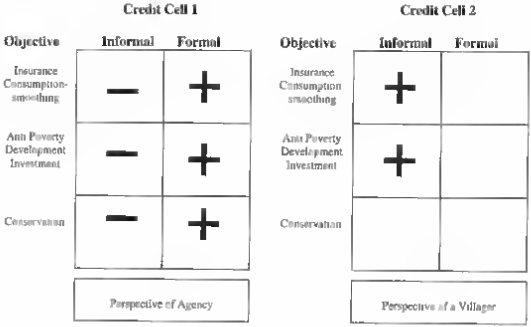

Figure 4 Credit Matrix

CHAPTER 10
CONCLUSIONS

This chapter presents conclusions within the context of the limited statistical links that occurred between formal credit and the various uses of forest resources, including cropping, fishing, hunting, and gathering. A rationale for the lack of any direct link is considered by looking at primary coping mechanisms, including formal credit and contemporary subsistence tactics.

The research on which this study is based was designed to examine these interactions along with environmental management, local subsistence strategies and access to individual credit in Africa's (and possibly the world's) oldest intact rainforest. This research examined the range of socio-economic impacts and environmental shock rural farmer's experience, and their use of forest products in the context of previous work on natural resource management and forest use. Additionally, in the context of these two bodies of work, this research also examined the nexus of issues relating to individual access to rural credit and its implications for forest use and conservation within the various models of park management and biodiversity preservation.

This is a significant link that has been left relatively unexplored in the current literature, where very little attention has been given to the structural sources and events that *lead* to transitory poverty and its relationship to forest use adjacent to protected areas where the conservation of biodiversity is part of a national program. This research proposal was funded, in part to fill in this gap, as a socio-cultural component of the

Smithsonian's Center for Tropical Forest Sciences new drug discovery program, and Dr Ricardo Godoy s comparative study of tropical forest use in Latin America

Dr Ricardo Godoy, the principle investigator for this study, looks at how the forest is used as a safety net among the Tsimane Indians of Bolivia He used similar methods to collect information from three other indigenous societies of lowland Latin America. the Tawahka of Hondouras and the Mojeño, Yuracaré and Chiquitano of Bolivia.
Dr Godoy s evidence from the broader study points to at least five tentative conclusions (Godoy and Jacobson 1998 Godoy 2000)

First, his analysis for the pooled sample supports the common view of forests as a safety net to forest-dwellers when misfortunes strike Second Tsimane households (particularly those living in relative autarky) do not seem to self insure against illness Third, when they do self insure against any one type of misfortune the Tsimane' seem to do so by relying on one and only one coping mechanism In other words misfortunes do not seem to induce households to adopt many coping strategies Fourth some potential mechanisms for coping with misfortunes such as reciprocity, borrowing, or savings seem to play a negligible role in protecting households Godoy maintains that this is surprising because indigenous Amazonians and Andeans are routinely portrayed as being enmeshed in thick webs of reciprocal obligations in the village Here, Godoy stresses that reciprocity may be widespread, but it does not seem to gain salience in times of need Finally Godoy points to some evidence that suggest that Tsimane' households with tighter links to the market may actually profit from the misfortune of their brethren In households closer to town one observes an increase, not decrease in savings in physical

assets in response to the misfortune of people in other villages (Godoy and Jacobson 1998, Godoy 2000)

Uniqueness of Research

This research in Korup was unique in three ways that merit brief mention. First, researchers in six sites used the same methods to construct a longitudinal panel data set to collect socio-economic information between 1999 and 2000. Using the same methods to collect information across these sites facilitated comparison. Second, researchers measured forest use, consumption, and shocks to income (proxied by illness and wealth) through monthly direct observation to reduce measurement errors. Finally, the six villages represent different degrees of exposure to credit and to the market, allowing for a comparison of household consumption with the use of forest resources along different points in an idealized autarky-to-market of access to credit continuum. The Korup Zone provides an ideal laboratory for addressing Godoy's initial query whether access to credit decreases economic dependability on forest resources.

All of these variables were an integral and unique component of the Smithsonian's Center for Tropical Forest Sciences' willingness to support the project as part of its long term interest in the design of an instrument to mitigate stress on forest resources in the Korup Zone. Two specific hypotheses evolved that this study was originally designed to address.

The first hypothesis that this study tested was that households with access to credit would:

- depend less on the forest for their income
- show greater evenness in consumption because they would be able to isolate consumption from production.

- not be limited by household size in the amount of what they could produce because they would be able to borrow to [or] hire workers, and
- be less vulnerable to recurrent health problems because their consumption would be more stable

The second hypothesis was that households without access to credit would,

- use the forest (rather than credit) as a buffer after experiencing a shock to their household or during lean periods
- change their production (e.g. intercrop diversity) to self insure production,
- pay a premium in lost output (and lower income) relative to households with access to credit,
- experience higher variability in income and consumption
- experience a wider and higher occurrence of health-related problems relative to households with access to credit and
- encounter more risk associated with health and welfare relative to households with access to credit

Findings

This research confirms that health and living standards influence reliance on the use and sale of products derived from the forest. Specifically income from the sale of forest products was more important as a percentage of total income for lower income households and families whose overall productivity was negatively affected by poor health. The study, however, did not find that local access to formal (e.g., bank or project accorded) rural credit, which had been the original focus of the study, had any measurable impact on reliance on forest products.

An important finding is that, while access to rural formal credit systems appears to be limited, what has emerged are not incipient credit systems but fully developed informal and completely indigenous credit mechanisms as ubiquitous as they are effective and secret, as part of a strategy for maintaining consumption through rough

times These systems are not primarily intended to increase fiscal reliability or to develop into financial growth mechanisms (even though they can do both) Risk or speculative investments are controlled by the informal alliances and associations that administer and maintain these rural systems. The fact that they exist to any degree might bias the real effects of access to rural formal credit despite its reliability or availability

The hypothesis of this study anticipated that access to formal credit would substantially affect both patterns of resource exploitation and health However the type of credit that was observed in these forest villages and the results of the analysis that tested the linkages among credit forest exploitation and health revealed the importance of informal credit systems rather than the anticipated forms of formal rural credit.

In the absence of any formal systems of rural credit institutional informal credit systems flourished as a competitive replacement possibly even inhibiting formal rural systems to even develop This study did not show any sort of strong causal relationship between formal or rural credit and forest reliance in either good times or bad. The study did show a much more elaborate web of informal credit networks than had been originally anticipated in the original research design. Unfortunately the original research design and research instruments emphasized formal and rural credit instrumeots which meant that informal credit was underestimated and not as precisely studied.[63] The methodology then was modified to increase qualitative study of informal credit, rather then change or eliminate the formal credit component. However this study was a module of a larger multinational research design This prevented any further comprehensive modifications

Although precise data are lacking, this study presents ample empirical evidence for informal credit networks that support subsistence and consumption in both good times and bad. This evidence, combined with extensive qualitative interviews illustrating the importance of informal credit structures, suggests that the significance of any relationship between rural credit and forest use might have been stronger had the full scale of informal credit been studied and included in the equation.

Especially important was the early qualitative evidence that people's access to informal credit exerted a strong, pervasive influence on income earning opportunities and living standards. The same access to traditional credit networks appeared to be inversely correlated with the level of dependence on forest products and positively correlated with health and food security. Based on the analysis, this study concludes that access to credit — if credit is defined to include both formal and informal credit — may smooth consumption more efficiently than traditional risk coping strategies such as productive asset depletion, animal husbandry, or seasonal migration. Supporting consumption credit — if it includes both formal and informal credit — can help in bridging temporary food shortages and alleviating personal emergencies as an insurance mechanism while maintaining human productive capacity (Schneider 1996). This also highlights the critical importance of social scientists studying these issues and becoming more sophisticated with regard to measuring and modeling informal credit flows as part of their economic models.

Support for these credit systems with careful attention paid to not supplant them may have important policy implications. The assumption made about rural credit is that

[63] informants were asked monthly if they had any money in savings, borrowed any

villagers will pay back their debt. This is difficult to determine especially if this type of debt is owed to a lending institution, formal or informal. Villagers with debts believe there are some people they should, or must repay before others. To this extent at least credit and debt are socially constructed and controlled (Shipton 1992). One key principle of this is the use of peer group pressure to guarantee repayments, another is the linkage of credit with deposits or investments in an informal group or a village institution. At any rate these findings emphasize the need to consider the likely effectiveness of the functioning and viability of informal financial groups in response to the failures of the formal groups that eventually seek to supplant them.

Preservation Through Use

Although informal credit structures may be used as an effective shock absorber the forest is still by and large the primary means for smoothing consumption during adverse periods for the majority of the Korup Park Zone's rural population.

While many people may have access to informal rural credit, all people on both sides of the credit divide, use whatever resources are available without any significant distinctions in attitudes, forest use patterns or resource use behavior. In fact, even those with any noteworthy savings are not significantly different regarding their attitudes, behaviors or welfare as a result of their access to forest resources or credit.

In the Korup Zone households appear to rely on the forest to mitigate the risks inherent to subsistence agriculture. In this sense, it can also be stated that forests are particularly important to households without other options for smoothing consumption (e.g. livestock, children off-farm, remittances, non agricultural income) but that their

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amount of money or had any outstanding loans.

importance is not relatively restricted to poor households or households without access to credit Access to credit did not seem to diminish reliance on the forest as a safety net.

It is also within this context that there is critical need to examine the importance of NGOs in supporting linkages with rural communities in the Korup Park Zone. This can be done in two ways First, international organizations have the capacity to support rural communities and their dependence on forest resources by introducing alternative strategies that are rooted in three sectors organizational socioeconomic and legal. And second, international organizations can support existing rural institutions specifically informal credit programs

By introducing or supporting existing mechanisms, advances can then be made to mitigate the loss of forest diversity Using this type of mitigation policy as a tactic rather than empowering popular models of community forestry that in actuality seek to restrict access to resources and forest usage, in the absence of governmental enforcement, will have more of an effect on preserving ecological diversity and maintaining project goals

Supporting these rural systems is important in two ways First, these systems are presently used on an informal level to maintain linkages among other villagers, ethnicities, and rural societies and then between the components of these rural communities and the larger institutional support networks regionally maintained by non governmental international organizations already in place Second, these linkages already exist and need to be reinforced, as they are presently the only existing preliminary conduits available to integrate the concerns of those interested in conservation and rural development and those actually living in rural communities These support mechanisms not only support an informal crisis credit system which many will use to ease lean

periods these systems are also sustain an important social component one that maintains a community of reciprocal mitigation among neighbors villages and ethnicities

To be effective these inputs need to be addressed on three levels organizational socioeconomic and legal.[64]

Organizational

The original scope of the Korup Park Project was an attempt to protect the biodiversity of the region by designing a resettlement scheme for the original inhabitants of the core forest Only later did the project assume a parastatal role not only in protecting the forest biodiversity but also in the administration of local needs and services; not limited to just law enforcement within the park boundaries..but also to capital construction..such as road and bridge building, health and education This pioneering imposition took on new roles and responsibilities as the project aged without really addressing its primary goal of resettling people outside the designated core forest

The Korup Park Project administers not only to the park it maintains financially but also to the many villages within the surrounding support zone where it has neo-statal operational control It is visible and more effective in development and management than any governmental counterpart agency in the area In fact, many of the government agencies filter their activities through the Korup Park mechanisms and maintain their primary or secondary office at its Mundemba and Nguti Headquarters.[65]

The Korup Project is also more accountable to the donors that fund its activities the host government and the beneficiaries living within the area than the Cameroonian

[64] See Mayaka s (2002) review of wildlife co management in the Bénoué National Park, Cameroon

[65] Helpful operationally it may also undermine state authority and confuse public perceptions about conservation at the expense of development objectives

government is accountable to the people who elected it. It is this type of accountability that fuels a continuously developing management plan that has to strategically adapt to these very burdens

As a result, management plans have recently shifted from direct result strategies, or interim grass roots approaches to adopting a longitudinal goal oriented methodology in the form of a dynamically evolving 'Master Plan', reflective of the planning techniques used in western corporate settings. Often this trend has also meant a shift in emphasis from the promotion of grassroots development to a new focus on external fund raising and efforts toward standardization. Unfortunately, as popular as it may be, it may be ineffective in preserving the regional diversity endemic to the Korup Zone. This may be due to the reforms themselves, as they are sometimes implemented merely as a pretence to gain access to more funding or less public and bureaucratic scrutiny. For diversity to be preserved in the Korup National Park zone initiatives need to be aimed at setting up community based projects to revive or strengthen conventional or traditional institutions that may have lapsed

Despite the apparent strength of some existing hierarchal institutions, characterized by strong traditional rule in the support zone villages, there is the downside that traditional leadership may become manipulated to keep hold over their populations to execute project goals at all costs. This will eventually erode traditional rule and any anticipated trust that it may have with rural people. A way out of this dilemma is to make the system less inequitable without weakening its effectiveness as a management system (Mayaka 2002; Dahl 1985). This can be accomplished through formalized co-management systems between the beneficiaries and institutions that can be held

accountable to beneficiaries with processes of enforcement that can be maintained through traditional and formal systems, thus making them transparent. This process should involve four steps: i) a goal statement, ii) institutional arrangements based on those goals, (iii) enforcement mechanisms to induce compliance with the declared objectives, and (iv) a timely transparent return of equity to the beneficiaries of the project.

Socioeconomic

Without much local understanding of its benefits, conservation policy has seen seventeen years pass in the Korup Zone without much measurable effect. The local beneficiaries have reluctantly accepted the obvious reasons for maintaining protected areas, but contend that there is recurrent inequitable distribution of conservation benefits and their costs.[66] This work has shown that, despite the fact that on an individual level the agricultural economy generated larger revenues than wildlife harvesting or opportunities derived from conservation, wildlife harvesting does play a significant role as an alternative land use and subsistence strategy. In effect it has another important advantage, it can also generate hard cash relatively quickly compared to developing a cash crop system. Therefore, until they are depleted beyond resilience, wildlife revenues will always play a role as a supplement source of income or subsistence mechanism.

Wildlife revenue has not become a primary subsistence strategy, and this should be acknowledged to maintain its role as a supplemental source, rather than to supplant other sources of income (palm production, cocoa production, affofo production, NTFP and subsistence agriculture). This fact may explain why non financial incentives such as local

[66] All wildlife benefits and park proceeds go directly to the Government of Cameroon.

democracy, pride and sense of ownership are gaining wide currency with community based conservation efforts (Roe et al 2000 Mayaka 2002)

Legal

To a limited extent current legislation in Cameroon provides indigenous populations the right to manage regional hunting concessions and crop expansions into the support zone Its objective is to severely limit hunting to a minor subsistence strategy and to perpetuate coercive conservation enforced by stringent distribution rights and restrictive buffer zones By allowing only subsistence use to local communities, this legislation is at variance with the current market-oriented conservation approaches (e.g Childs 2000, Kiss 1990 Mayaka 2002)

Childs (2000) and Kiss (1990) maintain that wildlife exploitation can actually contribute significantly to local development through for example, safari hunting and trophy fees Mayaka (2002) suggests in his study of the Bénoué National Park that for wildlife to be exploited as a resource grounded in a common property regime, two developments must occur One is to revert some of the state owned forest to traditional local governance as provided formally by law as seen in the CAMPFIRE and ADMADE models (e g. Child 2000 Child and Chitsike 2000) Another is in pooling private properties as illustrated by the conservancies in Namibia (Fabricius, et al 1999 Grootenhuis and Prins 2000) However these options are not compatible under the current land tenure and conservation conventions in Cameroon Mayaka (2002) points out several other inadequacies particularly that any revenue that may be considered the community's share of proceeds is based on a simple ministerial note, rather than a law or decree; hence, it does not represent a secure right to anyone other than the minister And second, in addition to being small, any revenues allocated to communities are tied to land

royalties, instead of wildlife per se. In the Korup Park Zone no land is individually owned; rather communities have discretionary and restricted rights to land and its use. Additionally there are no allocated revenues from the Korup Park Project returning to anyone in the Korup Park Zone. Any revenue derived from the park is returned to the state. Therefore, linkages with any proposed incentive program to conserve a target resource are weak.

Discussion

By addressing the three main components of a rural resource use system and incorporating careful planning, which is likely to be as tedious as it will be extensive, supporting the development of indigenous institutions can take the weight off expensive conservation efforts that have been primarily focused on exiting participatory development and enforcement of "fences and fines" tactics. Beneficiaries can only see this tactic despite how advantageous or constructive, as a coercive attempt to safeguard western concepts of conservation at the expense of rural development.

Setting up incentives to strengthen community-based projects has foundations in indigenous resource management and is congruent with the socioeconomic constructs of most traditional societies. Formally supporting traditional rule in an effort to revive customary institutions (that may have lapsed due in part to recent conservation restrictions) of preservation serves two purposes. First, it can been seen as an explicit attempt at developing co-management arrangements that have been otherwise obscured by the NGO/conservation/Government of Cameroon triad that has excluded local input and focused on ill-defined participatory development methodologies. Second, co-management avoids the failings of private property reforms – i.e., increased landlessness — and those of open access—i.e., resource dissipation (Mayaka 2002; Bromley 1992,

Child 2000). All that remains is an operational construct that can firmly institutionalize these methods of biodiversity preservation linking community management of resources and existing formal conservation initiatives

Risk Mitigation

Risk mitigation should also be considered a policy concern in Korup Park Zone because, as in much of the developing world risk can impede technology adoption stymie specialization, increase inequity and perpetuate vulnerability and the poverty of some even as regional economic development occurs (Ellis 1993, Morduch 1995, Pattanayak and Sills 2001) Policy initiatives to improve access to credit and insurance have often been hampered by poor implementation and erroneous assumptions, preventing benefits from reaching the poorest and most isolated households (Ellis 1993) This emphasizes the need for a strategy of natural insurance for these households

Remote sensed data on the impacts of macroeconomic change on deforestation in Southern Cameroon, by Mertens et al. (2000), suggest that economic crisis plays a fundamental role in the way land use practices affect forest cover through agricultural pressures on forest use. Mertens' results show that in comparing two periods of economic crisis (1986-91 and 1973 –86), the severity of deforestation related to population increased the marketing of plantain and non-plantain food crops, modification of farming techniques and colonization of new agricultural areas in remote forest zones. This supports our theory on the use of forest resources as a risk mitigation strategy during times of crisis Additionally Mertens et al maintain that their use of time series remote sensing methods, combined with household economic data, allowed for an accurate examination of the structural changes related to the economic variables that they believe were almost impossible to examine using only cross sectional analysis – whether these be

household or spatial They suggest that prior studies that have looked at these issues tended to overemphasize typical cross-sectional variables such as population distance to roads and markets compared with other variables that may be more important (e g major price or subsidies changes) Here lessons learned from policies outside of the formal forest sector are a key part of the problem of tropical deforestation, and therefore a key part of its solution

While results suggest that households in the Korup Park Zone rely on the forest to mitigate risk and stress there is no evidence that suggests the relative efficiency or full opportunity costs of rural or informal credit as a form of risk mitigation It can be suggested that policy formally linked with public forest conservation and local NTFP development and collection rights should be considered as a complement to policies that improve access to formal credit, crop insurance, and saving opportunities This can provide local insurance to offset the local opportunity costs often imposed by policies designed to protect biodiversity and other global forest services (Pattanayak and Sills 2001)

In the context of Cameroon, it can be suggested that prior to any crisis, and also during any crisis attention be paid to the unintended unanticipated, and, in some cases adverse consequences that external formal policies, including international mandates of conservation, agricultural import and export prices urban and public sector employment practices, and exchange rate policies have on deforestation and loss of biodiversity

Implications for Conservation Policy

The results of this research have significant implications for conservation policy that has historically focused, almost exclusively, on a combination of direct interventions that are designed to restrict forest access, but at the same time attempt and often fail to

raise farmer incomes When and if credit has been mentioned in the current literature on supportive rural financial structures it has usually dealt with increasing local access to formal credit through state or parastatal institutions that were often not sustainable once special project funding ended

Many of the new conservation and development initiatives reoriented their focus on community based strategies or popular participatory development methods to realize their goals To their credit, designers of these initiatives reintroduced the importance of the local community into a debate long stifled by quasi-military, hierarchal relationships among rural residents and conservation enforcement but to achieve these goals of conservation and participation policies must include rural residents in more meaningful ways (Gibson and Marks 1995)

Much of the present problem in the Korup Park Zone is in identifying and implementing acceptable strategies to mitigate the stress on vulnerable forest resources. This has generally been conducted through a top down "fences and fines" approach where participatory development has ushered in resettlement, resource restrictions, policy enforcement, and re-education as the main components in determining success While some of these goals may have been met how effective will be the long-term policy once funding for these initiatives ends? Will the effects on vulnerable resources remain constant or even escalate at the expense of early dialogue and co-management in place of ill-defined participation?

Despite any participatory initiatives that may have occurred in the region, identifying success still remains elusive Only by determining the dynamics involved in stress, consumption, and rural shock absorption can a proper plan then be laid out to offer

alternatives based on the ideologies of co-management rather than evolving directives issued to rural farmers through unaccountable bureaucracies with ill-definable goals This will also have an effect in strengthening indigenous mechanisms used by farmers in mitigating their stress in their own environments where conservation is part of a national policy

Methodology

This research methodology was originally designed to study access to formal credit and its effect on smoothing consumption during rough periods However the type of credit that was observed in these forest villages and the results of the analysis that tested the linkages among credit, forest exploitation and health were largely based on informal credit rather than the anticipated forms of formal credit Informal credit due to its very nature, is more fluid and less easily observed, or recorded. This posed a problem in measuring its direct effects. Most transactions are conducted in secret and not recorded or poorly recorded

Highly regarded, and socially supported these systems are a highly viable alternative to formal credit mechanisms that have historically sought to supplant them It soon became apparent that informal credit was far too important a factor to ignore.

Informal credit due to its very nature is more fluid and less easily observed, or even recorded. This posed a problem in measuring its direct effects Most of the transactions are conducted in usually in secret society meetings, informal age-group meetings or directly through officers representing a revolving savings group Little is recorded or if recorded, poorly recorded. Nevertheless, as a rural village institution, informal credit systems are every bit as important as formal credit systems are to areas that have access to them.

Final Thoughts

Finally, this research has shown how multiple institutions are involved in natural resource management, subsistence and mitigations strategies in the Korup National Park Zone. Of these institutions, most are not dedicated to those purposes or dependent on them in any functional way. Amid this multiplicity, different people appear to rely on different institutions to support their claims to access environmental goods or services for whatever reason. For most subsistence activities, they combine sets of claims supported by different institutions. Rights to access wildlife and rights to access forest goods and land may all be of little use individually to generate income, unless combined with kin based claims on labor for agricultural production, to existence of trading networks for effective marketing, and access to informal credit. Such combinations of institutions operating in concert at particular historical moments, shape particular trajectories of environmental change (Leach, Mearns and Scoones 1999). Many of these institutions are informal and consist more in the regularized practices of particular groups of people rather than in any fixed set of rules. As such, they are dynamic, changing over time as social factors alter their behavior to suit new social, political or ecological circumstances (Leach, et al., 1999). To introduce formal organizations to regulate traditional behaviors may miss – or reduce – this flexibility.

What becomes necessary is careful understanding of the social differences and diverse institutions that contribute to different peoples' endowments, entitlements, and environmental management. This understanding is vital to building strategic specificity in marginalized environments where intervention has historically been standardized. Leach, et al. (1999) stress that, if certain institutions can be identified as supporting the interests of social actors, or as contributing to "desired" courses of ecological change, then they

can be targeted in determining strategies for institution building or support. Furthermore, this would require that agencies evolve from present forms of participatory or generalized support to more explicit partiality, what Mehta (1997) has termed "aggressive partisanship" but remaining mindful to dangers that such targeting becomes in effect another form of imposition of formal organization on previously informal, dynamic arrangements (Leach, et al., 1999).

APPENDIX A
LIST OF ACRONYMS

BDCP/C	Bioresources and Development Conservation Program / Cameroon
CC	Community Conservation
CAMPFIRE	Communal Area Management Programme For Indigenous Resources
CCM	Community Conservation Movement
C.F.A.	Communauté Financière Africaine
CTFS/SI	Center for Tropical Forestry / Smithsonian Institute
DFID	Department for International Development (UK)
EC	European Community
EU	European Union
FAO	Food and Agricultural Administration
Franc C F.A.	Franc de la Coopération Financière en Afrique
GOC	Government of Cameroon
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
ICBG	The International Cooperative Biodiversity Group
ICDPs	Integrated Conservation and Development Project
KNF	Korup National Forest
KNP	Korup National Park
KZ	Korup Zone
LLI	Local Lending Institution
NGO	Non Governmental Organization

ODA	Overseas Development Administrator (now DFID)
ODNRI	Overseas Development Natural Resources Institute
PA	Protected Areas
RFI	Rural Financial Institution
STRI	Smithsonian Tropical Research Institute
USDOD	United States Department of Defense
USAID	United States Agency for International Development
WRAIR	Walter Reed Army Institute of Research
WWF/UK	World Wildlife Fund for the Protection of Nature United Kingdom

APPENDIX B
RESEARCH INSTRUMENT

1. Purpose of the Study

Many studies have shown that rural people in Africa and elsewhere turn to the forest with greater intensity when they experience mishaps. When crops fail or when sudden needs for cash arise, households often increased the amount of goods they take out from the forest. The forest acts as a safety net. In this study, we want to estimate the insurance value of the forest by estimating the extra value people extract from the forest when faced with shocks to themselves, their households, or their villages. We hypothesize that households with access to credit or other forms of insurance (e.g., labor markets) will not need to depend on the forest in times of need. Households without access to these forms of self-insurance will increase their reliance on the forest when mishaps strike. The study will be carried out in and around villages of the Korup National Park. We will estimate the economic value of the forest as a safety net for about 90 poor rural households with access to credit and another 90 households without access to credit. The study will be carried out in cooperation with the Center for Tropical Forest Science (CTFS) of Smithsonian Tropical Research Institute (STRI), with the Central African Regional Program for the Environment (CARPE), and in coordination with SI/BDCPC Korup Forest Dynamics Project. Research will last 18 months (October 1998 to February 2000) and will be carried out by Rodney Stubins (Ph.D. candidate, Department of Anthropology, the University of Florida) and two graduate students from Cameroon.

2. Hypotheses

Hypothesis One. Households with access to credit will:

i. Depend less on the forest for their income.
ii. Show greater evenness in consumption because they will be able to isolate consumption from production.
iii. Not be limited by household size in the amount of what they can produce because they will be able to borrow to [or] hire workers, and
iv. Be less vulnerable to recurrent health problems because their consumption will be more stable.

Hypothesis Two. Households without access to credit will:

i. Use the forest (rather than credit) as a buffer after experiencing a shock to their household or during lean periods.
ii. Change their production (E.G. intercrop diversity) to self-insure production.

iii Pay a premium in lost output (and lower income) relative to households with access to credit
iv Experience higher variability in income and consumption
v Experience a wider and higher occurrence of health related problems relative to households with access to credit and
vi Encounter more risk associated with health and welfare relative to households with access to credit.

3 Testing the Hypotheses

Dependent variables

Dependent variables will be measured at the individual level We will measure health nutrition and consumption by (a) taking body mass index measurements (BMI) (b) taking skin-fold measurements using a skin fold caliper, (c) collecting information on [tabulating] medical [and] related expenditures of informants [during the panel and cross sectional surveys] and (d) estimating the value of goods removed from the forest

Body Mass index is an index of a person s weight in relation to height determined by dividing the weight in kilograms by the square of the height in meters

$$BMI = \frac{\text{Weight (kg)}}{\text{Height}^2 \text{ (m)}}$$

The index is useful for identifying both under-nutrition and over nutrition It is especially useful in estimating the risk to health associated with over nutrition Approximately half the fat in the body is located directly beneath the skin In parts of the body, this fat is more loosely attached a person can pull it up between their thumb and forefinger These sites provide an opportunity to measure a person"s fat-folds By estimating subcutaneous fat with skin-fold calipers the assessor can approximate total body fat. These measurements decrease with both acute and chronic malnutrition and increase with obesity This is based on the evidence that the organism when faced with nutritional restriction, uses its nutritional reserves stored in the form of skeletal muscle protein visceral protein and fat

By recording the amount of medical-related expenditures villagers pay we can get an insight on the level of shock and its effect on household expenses due to illness or accidents We also will measure the value goods removed from the forest by

- Asking informants about all the local goods removed from the forest in the past week.
- Asking villagers and market sellers the price of the goods remaining to the forest

Explanatory variables

As illustrated in box one, our three surveys (demographic and socioeconomic survey, panel survey, cross-sectional survey) are divided into three levels (village level, household level, individual level), yielding a total of nine cells (I- IX). Each cell has one or more modules (e.g., demography, health, human capital, legal, etc.).

Box 1

Surveys

Survey Levels:	Demographic and Socioeconomic Survey	Panel Survey	Cross-Sectional Survey	
Village	I	IV	VII	Modules
Household	II	V	VIII	Modules
Individual	III	VI	IX	Modules

Within each cell, we will ask questions concerning that variable. For example, in the village cell (I) of the demographic and socioeconomic survey, we will ask questions concerning the variables at the village level: the village demographics, the commercial infrastructure, the social infrastructure, the types of shocks experienced in the village and the coping techniques used, and various village prices. In the household cell (II), we will ask questions dealing with household variables such as: household infrastructure, and household shocks.

Our main cell (III) will emphasize variables concerning the individual. Variables such as assets, income, capital equipment, agricultural capital, shocks experienced, shock absorption strategies, plot surveys, health and credit. Below is a brief outline of the demographic and socioeconomic survey corresponding to cells I through III. The other (rest of the) surveys can be found in Appendix B.

Demographic and Socioeconomic Survey

Village Level

Demographic information: village population, number of households.

Human capital information: Number of doctors, number of nurses, number and types of extension agents, number of clinics, veterinarians.

Legal information: Number of government officials, number of local officials, number of judges.

Commercial information: Number of markets, number of stores, distance from nearest town, distance from buses or taxis.

Physical infrastructure: Number of telephones, water treatment plant, community wells (open, closed), electric plant, paved roads, dirt roads, community center, churches, mosques.

Natural resources: Distance from forest, number of cooperative gardens, tree nurseries.

Village shock types of shock (e.g. epidemic flood contaminated water supply) fire, natural disasters (storms floods drought) insect infestations in the past 12 months
Social infrastructure Men s groups women s groups trade unions, credit cooperatives agricultural cooperatives, and livestock cooperatives
Non government organizations Local NGO s international NGO s aid organizations
Village Prices Crop prices farm products prices prices of meat forest products grains (rice sorghum wheat) soup oil standard staple vegetables and fruits prices, (manioc tomatoes onions, plantains mangos) legumes prices of wood, prices of labor prices of medical services, price of water per unit, none timber product prices

Household Level

Demographic information Number in household, boys girls adult males adult females ages polygamous, births, deaths people on exode[1] (seasonal migration)
Legal information Title to land home ownership
Household shock. Migration loss of farm labor losses affecting household, theft, destruction of house severe storm fire accident crop infestation How did you deal with each shock?
Health Do you have latrines or potable water (well, running water) in the household?
Household infrastructure Are animals in the household is there coop, corral is there a tin roof thatch roof wood walls cement walls thatch walls type of stove?

Individual Level

Demographic Marriage children age, live births still borns
Plot Survey Crops planted crop loss by plot in the past 12 months
Agricultural infrastructure Intercropping staggered planting, percentage of plot with high variety yields
Time Risk Preference Nine expected questions for time preference and four questions to measure risk attitude
Assets Bank savings land, capital equipment (plow tractor motorcar car bicycle, radio sewing machine, gas stove) animal stocks, crop stores seed stores, value of house commercial tree stock
Income. Sale of crop assets wage labor sale of crafts sale of farm products (e g., eggs meat, milk animals) sale of fruits foraged/hunted products, forest products, income from agricultural capital remittances.
Health Days out of work due to illness anthropomorphic measurements days in bed due to sickness types of illnesses
Credit. Loans given loans received, interest paid
Shock. Migration death illness theft loss of wages infestations predatory animals, crop loss natural disasters (floods, storms fire drought) in the past 12 months

Shock absorption strategy How do you cope with each shock over the past 12 months (e.g., health related, disaster related, economically related, agriculturally related, environmentally related)?
Legal Title to land indentured servitude share crop
Human capital Formal education parents formal education literacy language competence skills numeracy skills
Income Wages remittances agricultural returns and yields forest income garden income and yields
Demographic Status Marital status age status in the community (e.g., title)

4. Research Models

Conceptual Model

We view the chain of causality running from shocks to welfare as follows:

Shock →		Absorbers →	Income →	Consumption →	Welfare
Example	drought	credit		Δ nutrition	
	illness	forest dependence	Δ cash	Δ consumption	
		remittances			Δ health

Different types of shocks will induce villagers to use different strategies to cope with shocks. We call strategies for coping with shocks absorbers. The various absorbers can influence consumption, health, and the nutrition of villagers. Variability in consumption can hurt the health of villagers.

Shock and absorption strategies influence income, consumption, and health. If credit or other forms of self-insurance are available to cope with shocks, income, and consumption, health could improve, but if villages lack credit or other forms of shock absorbers, income could become unstable, hurting consumption and health.

Econometric Model

We will try to estimate the following econometric model:

$$Y_{ihvt} = \alpha + \beta X_{ihvt} + \delta Z_{hvt} + \lambda Z'_{vt} + \Omega Z''_{ivht} + \theta Z'''_{hvt} + \varepsilon$$

Where:

Y_{ihvt} = health / nutrition outcome of person i in household h in village v at time t
α = fixed effects
X_{ihvt} = vector of attributes of person i in household h in village v at time t
Z_{hvt} = vector of attributes of household h in village v at time t

Z_{vt} = vector of attributes of village v at time t

Z^{p}_{vht} = vector of shock absorbers of person i in village v in household h at time t

Z^{m}_{hvt} = vector of shock absorbers of household h in village v at time t

ε = unexplained variance or error term

$\beta,\delta,\lambda,\theta,$ and Ω are the parameters we need to estimate

5 Research Strategy

Detailed here are descriptions of the types of research methods we will use to collect data, plus an outline of the four stages of the project. We will use a combination of qualitative (e.g., participant observation) and quantitative (e.g. surveys) methods Qualitative methods will help in understanding the cultural perspective of dealing with shock Quantitative methods will allow us to collect information to test qualitative findings

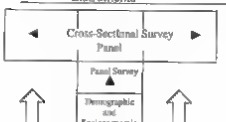
Our goal is to monitor the same 720 individuals in 180 households, from six villages for 12 continuous months This panel of information will allow us to gain a better understanding of a household's dynamic response to shocks It will also allow us to obtain better estimates of parameters..and use subjects as their own control to run various types of fixed and random effect models

Methods

We propose to rely on a team of three university graduate students Rodney Stubena and two Cameroonian graduate students The principal investigator R Godoy will travel to the research site once during January 1999

We will use a combination of qualitative and quantitative research methods because they complement each other We will begin with participant observation We will then use three types of surveys a demographic and socioeconomic survey a panel survey and a cross-sectional survey Research will take place in four logical linked and sequential stages (figure one)

Figure One: Instruments, Dates and Stages of Research



Stages of Research
Stage One, October 1998 – January 1999: Participant Observation

In the first stage we will try to understand in a qualitative way how rural households cope with shocks. Rodney Stubins will spend the first three months living in rural villages in the buffer zone of the Korup National Park. At this time he will start to learn the local culture and language. He will act as an observer gaining a qualitative and ethnographic understanding of the different households in the two types of villages we are examining.

By using methods of participant observation we will see how households cope with shocks, and the role of the forest, credit, migration remittances, reciprocity theft and savings in smoothing fluctuations in income and consumption. This will also be the time to gain a qualitative understanding of the effects of shocks on health and nutrition. It is during this stage that we will have the opportunity to introduce the project to villagers and explain in advance our intentions and the second stage of the survey.

Stage Two, January 1999 – February 1999: Demographic and Socioeconomic Survey and Training

In the second stage, we will carry out a baseline socioeconomic and demographic pilot survey of rural households in both types of villages. This survey will allow us to refine our hypotheses and modify the questionnaire before it is administered in its final form as a panel survey.

During this stage the principal investigator Ricardo Godoy will visit the Korup National Park. At this time we will select two Cameroonian students, at the MA or Ph.D. level, to help to administer the surveys. During this time Ricardo Godoy and Rodney Stubins will conduct a seminar for the students in the analysis of household data. At this time we will try to ensure inter-observer reliability by having researchers conduct interviews with subjects and then comparing the responses of researchers with one another.

Stage Three, February 1999 – January 2000 Panel Survey

In the third stage we will begin to construct the panel data set. The household survey will be applied to the same individuals and households every month. With this survey, we will collect quantitative data on

i. The different types of shocks and other socioeconomic explanatory variables for forest dependence (e.g., wealth, income, human capital)

ii. The use of the different forest products and the extent of forest clearance.

The benefits of conducting a panel survey include a more detailed understanding of the changes in the status of the person and the household over the course of the year. We will be able to record longitudinal data on selected variables rather than recording single-point observations. The panel survey will also allow us to run fixed and random effect models. A fixed effect regression is a regression that includes a dummy variable for each individual or household. The dummy variable picks up all the unobserved, fixed attributes of the person and, so, removes the bias from the estimated coefficients. For instance, a fixed-effect model of schooling and income (dependent variable) would include a regression of income and schooling (explanatory variable) at different points in time for the same individual plus a dummy for each person. The coefficient on the dummy variable would pick up the effect of character, parental care, native intelligence, and the like; the coefficient on education would pick up the pure effect of schooling.

Stage Four, January 2000 – February 2000: Cross-Sectional Survey

During stage four we will broaden the panel survey to include a larger cross-section of people, households, and villages in Cameroon. The villages picked for this household survey will be in the Korup National Park and in other regions. These villages can be near any forest in Cameroon, as long as they vary in their access to credit. We will shorten the panel survey questionnaire to make it suitable for a broader cross-sectional survey.

Surveys

Demographic and Socioeconomic Survey: Baseline for Panel

The demographic and socioeconomic survey will be the baseline for the panel study. This survey will serve to collect basic socioeconomic and demographic information of villagers. We will conduct this survey during stage two, between January 1999 and February 1999, in six villages. The survey will serve two purposes: (a) it will be the first survey of the panel data set; (b) it will contain information that we will not need to ask again because it will not change (e.g., sex, name, ethnicity).

Panel Survey

The panel is designed to monitor changes in consumption income health, labor and resources during the course of the study Repeated observations of the same people over time allow us to control for unseen fixed characteristics of informants and localities such as innate resilience in handling shocks

Panel studies often suffer from attrition (i e people die, move ont, or refuse to participate) between successive waves of the survey If this happens it can be difficult to tell if dropout is due to (a) the special character of the dropout population (e g- intermittent seasonal migrations) or to (b) real changes in the variables being studied (e g., shocks that cause informants to drop out) or to both To deal with possible attrition, we will replace subjects and households and create a data set that includes the reasons why households left the sample.

Taking repeated measnres of the same households over time yields valuable information because it will allow us to (a) increase the sample size and, (b) identify and examine whether relationships found in one survey hold true in subsequent years

Cross-Sectional Survey

Cross-sectional surveys measure variables at a single time During the last three months of the panel survey, December 1999 to February 2000, we will apply a shorter version of the panel survey to a large number of villages households and informants The cross-sectional survey will be a modified shorter version of the survey used to gather the panel data. It will also include portions of the demographic and socioeconomic questionnaire, as these new informants will not have been questioned before

6 Rationale for Selection of Research Sites and Subjects

Below we explain the rationale for the choice of the Korup National Park the villages, the households, and the people we intend to study

Karup National Park

The Korup National Park is a well-established, remote and inaccessible forest along the western border of Cameroon As one of Africa's richest rainforests, it is a major center of biodiversity with the largest number of plant species of any rainforest yet described in Africa

The Korup National Park is already the focus of a long-term study by the Smithsonian Tropical Research Institute funded in part by the ICBG's program for Drug Discovery and Conservation of Biodiversity in Western and Central Africa, to collect and analyze biological and ecological data. The cultural socioeconomic and demographic information collected by our study will merge smoothly with the collaborative work of the Smithsonian Tropical Research Institute and the BDCP's efforts in helping to build more accurate models of how humans are using the forests and what management practices might work best to enhance

conservation We hope to show that the availability of credit and other forms of insurance might reduce dependence on the forest, thereby, enhancing conservation

Village Selection

We will select six villages within and around the Korup National Park. Three villages will have credit institutions, and three will not. All villages will be near the Korup National Park, but the villages selected with credit will not be within proximity of villages selected without credit.

Household Selection

We define a household as all people living under one or several roofs within a compound who share the same resources, food, and food storage. We will chose households at random with the consent of the local village chief. We will choose four participants for the study at random within each selected household. Thirty households from each village will be selected, yielding 180 households for our survey.

Informants Selection

Informants considered for the survey will include children over the age of five and adults. We define adults as people [members of a household] over the age of 16 who contribute resources (e.g., remittance, labor) to the home. We will select four informants per household. Two informants will be the heads of the household (e.g., one male, and one female). The remaining two informants will consist of one randomly selected female child, and one randomly selected male child. We will thus have 720 informants from 6 villages and 180 households.

Scheduling the Interviews

Interviews will be scheduled at the convenience of the participants. Interviews will take place on site within the village, household, or the fields of the participants. In general, the interviews will be conducted in private, unless the information is in the public domain. When research deals with matters that are personally sensitive, the presence of outsiders or other family members may inhibit respondents' embarrassing them into evasion or silence. Onlookers may even encourage respondents to answer untruthfully. Therefore the more sensitive the topic, the stronger the case for conducting the interviews in private.

7. Management of Data
Coding

Our data will be recorded on notebooks and then ledger type spreadsheets before being put into the computer. Each informant will be assigned a unique identification number. This number will be made up of a combination of three identification numbers: (a) one unique identification number assigned to a specific village where the interview is held, (b)

another unique identification number assigned to the specific household within the village and (c) the third unique identification number assigned to the informant within the household (Example 1) These unique identification numbers will preface each new entry for each village household and informant for each level of the survey when entered into the spreadsheet Each subsequent module (e g. health, demography, income, etc) will begin with this unique subject identification number for that informant, thereby allowing us to link different [each] spreadsheets

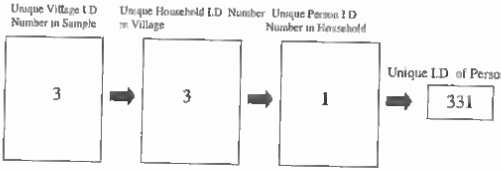
Example 1:

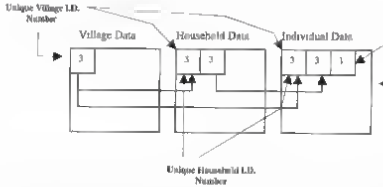
i Village unique identification out of all the sample villages = 3
ii Household unique identification number within the village = 3
iii Household identification number is a combination (not addition) of numbers from i & ii = 33

iv Informant unique number in household is 1
v Therefore, the informant's unique identification number will be formed by a combination of digits from i, ii & iv = 331

This procedure will allow us to link the village, household, and individual modules, as shown in example 2

Example 2:

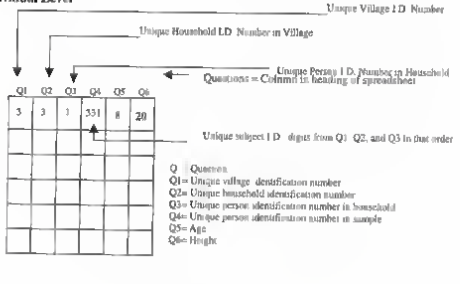




Each column on the spreadsheet will represent a new question for all the informants in the survey. Each answer or variable given for each of the questions of the survey will be entered into the informant's corresponding box down the column of the spreadsheet. Since there will be no qualitative answers used for the surveys each quantitative answer will be a numerical value. That value will be what is entered in the box along the row of the corresponding selected informant (Example 3). After the data from the survey is collected in the field notebooks it will be then entered directly into the computer in the field.

Example 3:

Individual Level


Unique Village I.D. Number
Unique Household I.D. Number in Village
Unique Person I.D. Number in Household
Questions = Column in heading of spreadsheet
Q1 Q2 Q3 Q4 Q5 Q6
1 3 3 1 331 8 20
2
3
4
5
6
Unique subject I.D. digits from Q1, Q2, and Q3 in that order
Q = Question
Q1= Unique village identification number
Q2= Unique household identification number
Q3= Unique person identification number in household
Q4= Unique person identification number in sample
Q5= Age
Q6= Height

Inter-Observer Reliability

During stage two, January 1999 to February 1999 we will measure inter-observer reliability At this time the students and Ricardo Godoy, will conduct interviews together verifying that all researchers code the information in exactly the same way

Use and Dissemination of Results

Once the information is processed and properly analyzed we propose to make the major findings available through

i Working papers in English and French
ii Scholarly publications,
iii The theses of the students (American and Cameroonian) and
iv Seminars for policy makers and organizations working on conservation in Cameroon

Protocol of Sending Data and Backup

We will store this information on the laptop computer used for this project, in archival ZIP format A backup copy will be stored with the Center for Tropical Forest Science at their field office in the Korup National Park and in Douala Every two weeks we will send the data by electronic mail and hard copy to R Godoy R Godoy will then process and check the data for anomalies reporting any coding errors to R. Sinbina. After all the data has been collected, we will forward the results to the following institutions and people

i. Laurent Some
Central African Regional Program for the Environment (CARPE)
1250 24th Street NW
Washington D C 20037 USA
Telephone 202-822 3475

ii Elizabeth Losos
Center for Tropical Forest Science (CTFS) of Smithsonian Tropical Research Institute (STRI) Washington D C USA
Telephone 202 633 8095
Fax 202 633 2819

iii. Paul Nchoji Nkwi President, Pan-African Association of Anthropologists (PAAA/ICASSRT)
P O Box 1562, Yaounde, Cameroon
Telephone: (011-237) 234-227
Fax (011-237) 221 873

If at any time during the data collection process any of the specified individuals and organizations would like to see our results of the project they can contact R Godoy for the coding sheet We will also leave a copy of our data and results in Cameroon

8. Significance of Proposed Research

The proposed research will contribute to studies of forest valuation public policies to lower deforestation and to our understanding of the socioeconomic determinants of the use of tropical rain-forests by rural populations

- **Forest Valuation**

Scholars have typically valued the benefits of the forest to local populations by measuring the flow of goods to people surrounding the forest. The method produces an under-evaluation of the forest because it leaves out the value of the forest as an insurance mechanism to local people Ours will be the first ever attempt to quantify the insurance value of the forest to indigenous people and thus get a more accurate estimate of the [opportunity cost] value of a [of the] standing forest to local people

- **Credit and Insurance Policies**

Our study will allow us to measure the degree to which access to credit and to other forms of self insurance could lower pressure on the forest If we find an inverse link among forest dependence and access to credit policy makers may have in credit a new way of thinking about how to enhance conservation

- **Training of Cameroonians**

Through Rodney Stubins and Ricardo Godoy, we will be able to train two Cameroonian University students on how to do a household socioeconomic survey and how to analyze the information with multivariate techniques Cameroonian students will use the data from the survey to write their thesis

9 The Survey: General Principles

Measurement Units of the Survey

The following translates local measurements to correspond with quantifiable standard measures

Measurement units (specify type of container) = 1KG
Measurement units (specify type of container) = 1 liter
$1 00 = 567 CFA Nov 20 1998

Missing Values, Zeros, Percentages and Attrition

Missing values are those values where the informant does not know the answer, or where the answer provided is inapplicable In all surveys missing values will be assigned the value " Zero "0" will be used when the answer is none or no
For all Yes/No questions, no will always be represented as "0" and yes will always be represented as "1" (e g , 0= no 1= yes) "9999" will be used when a person remembering has forgotten the amount, but remembers having a good or bad experience For instance, "How many goats did you sell last month?" The person may remember having sold goats but does not remember how many The appropriate answer would be 9999 Percentages will be written as a decimal (e g. 50% = 50) and not 50% The number 666 will represent people who die

Dates

When administering the "panal survey", references to "within the last year", will refer to the 12 months right before the date of the interview and not about the 12 previous calendrical months

Rules Regarding Questions in the Panel

Each question in the surveys will remain the same throughout the entire 12 months of the research period to ensure comparability through time and space

Policy Regarding Numbers of Questions

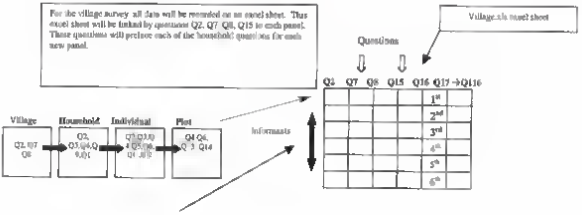
The numbers represenung each of the questions in the demographic and socioeconomic survey the panel survey, and the cross sectional household survey will remain consistent for all surveys throughout the 12 months of the research period. For example, when administering the demographic and socioeconomic questionnaire during stage two and then again during stage four, question numbers for both questionnaires will remain constant, even if some questions have been omitted (thus e g , age may be Q42 and will remain Q42 in all surveys)

Equipment Needed for each Interview

i Weight scale
ii Tape measure
iii Notebook and pen
iv Skin fold caliper
v Recorder
vi Waterproof bag
vii Flashlight
viii Gift
ix Know your greetings

This survey was administered between March 1999 and February 2000 in the Korup National Park in Cameroon. *Italicized Questions* were asked repetitively over the course of the survey while the non italicized questions were only asked once

10 The Survey Instruments



Demographic and Socioeconomic Survey

A Village Level (Excel data sheet Village.xls)

Questions:

Demographic Information

1 Name of Village (Text)
2 Unique Village identification (Two-digit number)
3 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX } Household questions
4 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX }

5 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX } Individual questions
6 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX }

7 Date of survey (day/month/year)
8 Time of survey (hrs. minutes)

9 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX } Household questions
10 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX }

11 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX } Individual questions
12. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX }

13 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX } Plot Questions
14 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX }

15 Number of households in village (number in digits)
16 Village population (number in digits)
17 Years since establishment of this village (number in years)

Human Capital Information

18 Number of doctors (number)
19 Number of teachers in village (number)
20 Number of nurses (number)
21 Number of agricultural extension agents (number)
22 Number of forestry extension agents (number)
23 Number of clinics (number)
24 Number of veterinarians (number)

Legal Information

25 Number of government officials (number)
26 Number of local officials (number)
27 Number of judges (number)

Commercial Infrastructure

28 Number of markets (number)
29 Number of stores (number)
30 Distance from nearest town (in kilometers)
31 Distance from nearest town (in hours to walk today)
32 Distance from nearest town (in hours to walk during rainy season)

Physical Infrastructure

33 Number of community wells open (number)
34 Number of community wells closed (number)
35 Is the village on a motorable dirt road? (0= no; 1= yes)
36 Number of community centers (number)
37 Number of public churches (number)
38 Number of public mosques (number)
39 Number of bars in town (number)

Natural Resources

40 Village distance from forest (in kilometers)
41 Number of cooperative gardens (number)
42 Number of tree nurseries (number)

Village Shocks

43 Has there been any epidemics in the past 12 months (0= no 1= yes)
44 Has there been any measles in the past 12 months (0= no; 1= yes)
45 Has there been any small pox in the past 12 months (0= no 1= yes)
46 Has there been any occurrence of polio in the last 12 months (0= no 1= yes)
47 Has there been a large fire in the past 12 months. (0= no 1= yes)
48 Has the village water been contaminated in the past 12 months. (0= no 1= yes)
49 Has there been any destructive storms in the past 12 months (0= no, 1= yes)
50 Has there been a flood in the past 12 months (0= no; 1= yes)
51 Has there a drought in the past 12 months (0= no 1= yes)
52 Has there been an insect infestations in the past 12 months (0= no 1= yes)

Social Infrastructure

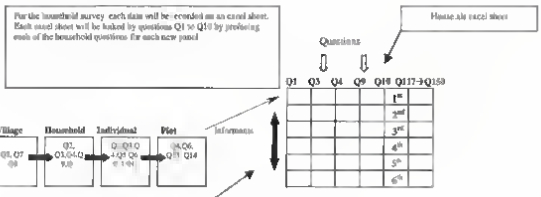
53 How many men's social groups are there in the village (number)
54 How many women's social groups are in the village (number)
55 How many mixed social groups (men and women's) are in the village (number)
56 How many trade unions are there in the village (number)

57 How many credit cooperatives are there in the village. (number)
58 How many agricultural cooperatives are there in the village (number)
59 How many cash clubs (groups of people who pool a set amount of cash for equal distribution) are there in the village (number)
60 How many non-governmental organizations (NGO) are operating in this village. (number)

Village Prices

61 What is the price of maize today per kilo in CFA (Price per kilo today)
62 What was the price of maize last year per kilo in CFA (Price per kilo last year)
63 What is the price of cocoyam today per kilo in CFA (Price per kilo today)
64 What was the price of cocoyam last year per kilo in CFA (Price per kilo last year)
65 What is the price of yam today per kilo in CFA (Price per kilo today)
66 What was the price of yam last year per kilo in CFA (Price per kilo last year)
67 What is the price of palm nuts today per kilo in CFA (Price per kilo today)
68 What was the price of palm nuts last year per kilo in CFA. (Price per kilo last year)
69 What is the price of legumes today per kilo in CFA (Price per kilo today)
70 What is the price of rice today per kilo in CFA. (Price per kilo today)
71 What is the price of cassava today per unit in CFA (Price per unit today)
72 What is the price of onions today per unit in CFA (Price per unit today)
73 What is the price of tomatoes today per unit in CFA (Price per unit today)
74 What is the price of plantains today per unit in CFA (Price per unit today)
75 What is the price of mangos today per unit in CFA (Price per unit today)
76 What is the price of citrus today per unit in CFA (Price per unit today)
77 What is the price of soap today per kilo in CFA (Price per kilo today)
78 What is the price of cooking oil today per liter in CFA (Price per liter today)
79 What is the price of fuel wood today per unit in CFA (Price per unit today)
80 What is the price of village well water per liter today in CFA (Price per liter today)
81 What is the price of cigarettes per unit today in CFA (Price per unit today)
82 What is the price of beef per kilo today in CFA (Price per kilo today)
83 What is the average price of fish per kilo today in CFA (Price per kilo today)
84 What is the cost of unskilled village wage labor per day today in CFA (Cost of one days labor in CFA)
85 What is the price of an initial medical consultation at the nearest medical facility in CFA (Price in CFA today)
86 How much CFA does it cost to purchase a spade? (number in CFA)
87 How much CFA did it cost to purchase a spade last year? (number in CFA)
88 How much CFA does it cost to purchase a hoe for plowing? (number in CFA)
89 How much CFA did it cost to purchase a hoe for plowing last year? (number in CFA)
90 How much CFA does it cost to purchase a used 504 Peugeot? (number in CFA)
91 How much CFA did it cost to purchase a used 504 Peugeot last year? (number in CFA)
92 How much CFA does it cost to purchase a bicycle? (number in CFA)
93 How much CFA did it cost to purchase a bicycle last year? (number in CFA)
94 How much CFA does it cost to purchase a short wave radio cassette player? (number in CFA)
95 How much CFA did it cost to purchase a short wave radio cassette player last year? (number in CFA)

96 How much CFA does it cost to purchase an average moped? (number in CFA)
97 How much CFA did it cost to purchase an average moped last year? (number in CFA)
98 How much CFA does it cost to purchase an average sewing machine? (number in CFA)
99 How much CFA did it cost to purchase an average sewing machine last year? (number in CFA)
100 How much CFA does it cost to purchase a local fabric loom? (number in CFA)
101 How much CFA did it cost to purchase a local fabric loom last year? (number in CFA)
102 How much CFA does it cost to purchase a two burner gas stove? (number in CFA)
103 How much CFA did it cost to purchase a two-burner gas stove last year? (number in CFA)
104 How much CFA does it cost to purchase a one-year-old female goat? (number in CFA)
105 How much CFA did it cost to purchase a one year-old female goat last year? (number in CFA)
106 How much CFA does it cost to purchase a one-year-old female pig? (number in CFA)
107 How much CFA did it cost to purchase a one-year-old female pig last year? (number in CFA)
108 How much CFA does it cost to purchase a one year-old female sheep? (number in CFA)
109 How much CFA did it cost to purchase a one-year-old female sheep last year? (number in CFA)
110 How much CFA does it cost to purchase a one-year-old hen/chicken? (number in CFA)
111 How much CFA did it cost to purchase a one-year-old hen/chicken last year? (number in CFA)
112 How much CFA does it cost to purchase a one year-old female duck? (number in CFA)
113 How much CFA did it cost to purchase a one year-old female duck last year? (number in CFA)
114 How much CFA does it cost to purchase a one-year-old female dog? (number in CFA)
115 How much CFA did it cost to purchase a one-year-old female dog last year? (number in CFA)



B Household Level (Excel data sheet House.xls)

Demographic Information

1. Name of village (In text)
2. Unique village identification number (Two digit number)
3. Unique household identification number within the village (Two digit number)
4. Unique household identification number within total sample (Digits of Question 2 and Question 3 a combination not addition)
5. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6. XXXXX[illegible] } Individual Questions
7. [illegible]
8. XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX } Village Questions
9. Date of survey (day/month/year)
10. Time of survey (hrs.minutes)

116. Number of people (adults and children) in the household. (number in digits)
117. Number of adult men (age sixteen or over) in the household number in digits)
118. Number of boys (under the age of 16) in the household. (number in digits)
119. Number of girls (under the age of 16) in the household. (number in digits)
120. Number of adult females (age sixteen or over) in the household. (number in digits)
121. Is this a polygamous (more then one spouse) household (0= no; 1= yes)
122. Number of births in the past year (number in digits)
123. Number of deaths in the past year (number in digits)
124. Number of people that have gone on exode, seasonal migration in the past year (number in digits)

Legal information

125. Does the household have title to the land. (0= no, 1= yes, 2 = in the process of getting title 9999 = do not know)
126. Does the household have ownership of the house?(0= no, 1= yes 2 = in the process of getting title 9999 = do not know)

Household shock

127. In the past year in 1998 has this household experienced theft (0= no, 1= yes 9999= do not know)

128. How did you cope with theft (0= did nothing, 1= borrowed cash from family 2 = arranged for credit 3 = sold assets to pay for reparations 4 = migrated 5 = worked another job 8 = found money)

129. In the past year 1998, has this household experienced house destruction (0=no 1= yes; 9999 = do not know)

130 How did you cope with the destruction of the house (0= did nothing, 1= borrowed cash from family 2 = arranged for credit 3 = sold assets to pay for reparations 4 = migrated 5 = worked another job 8 = found money 9 = built a new house 10= repaired it yourself)

131 In the past year 1998, has this household experienced n fire (0= no, 1= yes 9999= do not know)

132. How did you cope with fire, (0= did nothing, 1= borrowed cash from family 2 = arranged for credit 3 = sold assets to pay for reparations, 4 = migrated 5 = worked another job 8 = found money 9 = built a new house 10= repaired it yourself)

133 In the past year 1998, has this household experienced n severe storm causing destruction (0= no 1= yes 9999= do not know)

134 How did you cope with severe storms, (0= did nothing 1= borrowed cash from family to cover reparations/expenses 2 = arranged for credit to cover reparations/expenses 3 = sold assets to pay for reparations/expenses, 4 = migrated, 5 = worked another job 8 = found money 9 = built a new house 10= repaired It yourself)

135 In the past year 1998, has this household experienced crop infestation (0= no; 1= yes, 9999= do not know)

136 How did you cope with crop infestation (0= did nothing, 1= borrowed cash from family to cover reparations/expenses 2 = arranged for credit to cover reparations/expenses 3 = sold assets to pay for reparations/expenses 4 = migrated, 5 = worked another job 8 = found money 9 = built a new house, 10= replanted)

137 In the past year 1998 has this household experienced any traumatic accidents. (0= no, 1= yes 9999= do not know)

138 How did you cope with a traumatic accident, (0= did nothing, 1= borrowed cash from family to cover reparations/expenses; 2 = arranged for credit to cover reparations/expenses, 3 = sold assets to pay for reparations/expenses, 4 = migrated 5 = worked another job 8 = found money 9 = built a new house)

139 In the past year 1998, has this household experienced loss of labor (0= no, 1= yes 9999= do not know)

140 How did you cope with loss of labor (0= did nothing; 1= borrowed cash from family to cover reparations/expenses 2 = arranged for credit to cover reparations/expenses, 3 = sold assets to pay for reparations/expenses 4= migrated, 5 = worked another job 8 = found money)

141 In the past year 1998 has this household experienced any other shock (0= no, 1= yes 9999= do not know)

142 How did you cope with the shock , (0= did nothing; 1= borrowed cash from family to cover reparations/expenses, 2 = arranged for credit to cover reparations/expenses, 3 = sold assets to pay for reparations/expenses, 4 = migrated 5 = worked another job 8 = found money; 9 = built a new house)

Health

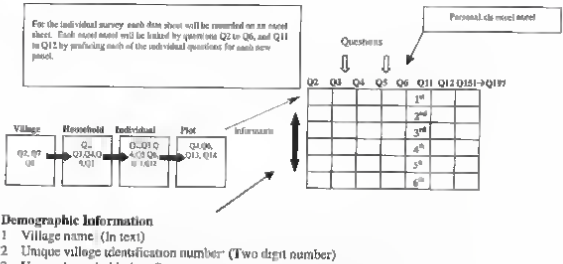
143 Is there a latrine in the household?(0= no 1= yes, 9999= do not know)

144 Is there potable water in the household? (0= no 1= yes 9999= do not know)
145 Is there open well in the household? (0= no 1= yes 9999= do not know)
146 Do you keep preventative medicines or vitamins in the household? (0= no 1= yes, 9999= do not know)

Household Infrastructure

147 What type of house? (1= wood frame 2= cement frame 3= mud mixture frame 4= thatch house, 5= combination of materials 9999= do not know)
148 What type of stove is in the household? (1= gas stove 2= three rock fireplace 3= improved wood stove 4= portable steel wood stove 9999= do not know)
149 What type of roof do you have over the house (1 = thatch 2 = wood, 3 = metal, 4 = plastic, 5 = cement 6= other 9999 = do not know)

C. Individual Level (Excel data sheet Personal xls)



Demographic Information

1 Village name (In text)
2 Unique village identification number (Two digit number)
3 Unique household identification number within the village (Two digit number)
4 Unique household identification number in total sample (Digits of Question 2 and Question 3 a combination, not addition)
5 Unique identification number for informant in the household (one digit number)
6 Informant's unique identification digit in total sample (a combination of digits from Question 1 Question 2 and Question 4, not an addition)
11 Date of Survey (day/month/year)
12 Time of survey (hrs minutes)

150 Marital status? (1= married 2= single never married, 3= divorced, 4= widowed 5= in a polygamous marriage 6= divorced/married)
151 Years married? (In number of years)
152 Age in years? (In number of years)
153 Your ethnic group self-identification (1= Oroko 2= Korup, 3= Ejagham, 4= Mbo 5= Hausa 6= Bamiléké 7= Fula 8= Bassosi 9999= do not know, = other)
154 Do you have a title in your community; (0= no, 1= Deacon 2= Al Hadji, 3= Mayor; 4= Councilors, 5= Quarterhead 6= Chief, 7=other)

Human Capital

155 Maximum number of years of formal education
156 Maximum number of years Father s education
157 Maximum number of years of Mother s education
158 English comprehension will be determined by randomly asking one of the following four questions orally, and verifying whether the informant understands English by the answers given

Test Question 1 How long have you lived in this town? (1= competent 0= does not know)

159 Test Question 2. What other towns would like to live in? (1= competent, 0= does not know)
160 Test Question 3.. What are your favorite foods? (1= competent, 0= does not know)
161 Test Question 4 Do you have any questions for me? (1= competent. 0= does not know)
162 Reading competence in English (1= competent 0= does not know)
This is determined by showing the informant one of the following four questions, randomly selected, on a cue card in English and verifying reading competence by the answers given

Test Question t Have you ever been to Nigeria? (1= competent, 0= dues not know)

163 Test Question 2 How many children do you have? (1= competent 0= does not know)
164 Test Question 3 What did you buy on the last market day? (1= competant, 0= does not know)
165 Test Question 4 What was the first thing you did today after you woke up? (1= competent 0= does not know)
166 English writing skills (1= competent 0= not competent) Determined by showing a card randomly with one of the test questions written in English then asking the informant to write out their answer on paper provided English writing skills will be determined by the answer given

Test Question 1 Where was the farthest place that you have traveled? (1= competent, 0= not competent)

167 Test Question 2 Where in the world would you like to go and visit If you could? (1= competent 0= not competent)
168 Test Question 3 What do you plant in your fields? (1= competant 0= not competent)
169 Test Question 4 What is your favorite food? (1= competent 0= not competent)
170 French comprehension will be determined by randomly selecting one of the following four questions in French, then seeing whether the informant understands
Test Question 1 Depuis quand est-ce que vous arrivez dans cette village? (1= competent 0= not competent).
171 Test Question 2. Combien des enfants est-ce que vous avez? (1= competent 0= not competent)
172 Test Question 3 Ou est la place la plus loin teane que vous avez visite ?
173 Test Question 4 Ou dans le monde entier voulez vous aller visiter?
174 Reading competence in French will be determined by showing the informant one randomly selected question of the following four questions in French on a cue card and seeing if the informant understands

Test Question 1 Depuis quand est-ce ques vous vivez dans cette village? (1= competent 0= not competent)

175 Test question 2 Combien de fois par semaine mangez-vous de la viande? (1= competent, 0= not competent)

176 Test question 3 Qu est que vous avez achete au dernier marche ? (1= competent 0= not competent)

177 Test question 4 Qu'est ce que sait la premiere chose ques vous avez fait aujourd hui? (1= competent 0= not competent)

178 French writing skills will be determined by showing one randomly selected card with one of the following four test question written in French then asking the informant to write out their answer on paper provided.

Test Question 1 Avez vous beaucoup d amis dans ce village? (1= competent 0= not competent)

179 Test Question 2 Combien d'annees êtes vous marrie ? (1= competent, 0= not competent)

180 Test Question 3 Est-ce que vous avez un jardin ou vous plantez des legumes? (1= competent 0= not competent)

181 Test Question 4 Est-ce que vous mangez du poisson? (1= competent, 0= not competent)

182 Are you able to understand Oroko (1= yes, 0= no)

183 Are you able to understand Korup (1= yes, 0= no)

184 Are you able to understand Ejagham (1= yes, 0= no)

185 Are you able to understand Mbo (1= yes 0= no)

186 Are you able to understand 8 assosi (1= yes 0= no)

187 Are you able to understand 8 amiéké (1= yes, 0= no)

188 Are you able to understand Hausa (1= yes, 0= no)

189 Numeracy will be determined by showing one of eight cards with a mathematical equation to solve orally by the respondent (1= competent, 0= not competent)

Test 1 7 X 7=?

190 Test 2 20 + 13=?

191 Test 3 25/5 =?

192 Test 4 290 30=?

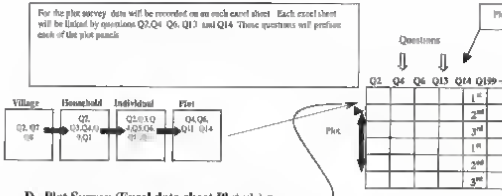
193 Test 5 50+150=?

194 Test 6 100 / 4=?

195 Test 7 1000 – 100 =?

196 Test 8 25 X 5 = ?

197 How many plots do you have? (number)



D. Plot Survey (Excel data sheet Plot.xls)

2 Unique village identification number (Two digit number)
4 Unique household identification number in total sample (digits of Question 2 and Question 3, a combination not addition see page 27)
6 Informant s unique identification digit in total sample (Combination of digits form question 2 question 3 and question 4, not addition, see page 27)
13 Date of survey (day/month/year)
14 Time of survey (hrs minutes)

198 *How many plots do you have?*
199 *What is the size of this plot? (number in hectares)*
200 What percentage of this plot is used for planting Yam (perceutage number)
201 What percentage of this plot is used for planting Maize (percentage number)
202 What percentage of this plot is used for planting Palm (percentage uumber)
203 What percentage of this plot is used for planting Tobacco (perceutage number)
204 What percentage of this plot is used for planting Cucao (percentage number)
205 What percentage of this plot is used for planting Cocoyam (percentage number)
206 What percentage of this plot is used for planting Plantains (percentage number)
207 What percentage of this plot is used for planting Tomatoes (percentage uumber)
208 What percentage of this plot is used for planting Pepper (percentage number)
209 What percentage of this plot is used for planting Cassava (percentage number)
210 What percentage of this plot is used for planting Onions (percentage number)
211 What percentage of this plot is used for planting Sugar cane (percentage number)
212 What percentage of this plot is used for planting Potatoes (percentage number)
213 What percentage of this plot is used for planting Coffee (perceutage number)
214 What percentage of this plot is used for planting Cabbage (perceutage number)
215 What percentage area of this plot do you inter-crop?(percentage number)
216 Do you use staggered planting techuiques in this plot? (0 = no 1 = yes, 9999 =do not know)
217 What percentage of this plot has high yield varieties? (percentage number)
218 *Have you had any insect infestations in this plot in the past month? (0= no 1= yes)*
219 *Have you had any drought in this plot in the past month? (0= no 1= yes)*
220 *Have you had any plant disease in this plot in the past month? (0=no 1= yes)*
221 *Have you had any soil erosion in this plot in the past month? (0= no, 1= yes)*

222 *Have you had any severe storms in this plot in the past month? (0=no 1= yes)*
223 *Have you had any flood in this plot in the past month?(0= no 1= yes)*
224 *Have you had any animal problems in this plot in the past month? (0=no 1= yes)*
225 What percentage of Yam have you lost for this plot in the last 12 months? (Percentage number)
226 What perceutage of Maize have you lost for this plot in the last 12 months? (Percentage number)
227 NO QUESTION
228 What percentage of Tobacco have you lost for this plot in the last 12 months? (Perceutage number)
229 What percentage of Cacao have you lost for this plot in the last 12 months? (Perceutage uumber)
230 What perceutage of Cocoyam have you lost for this plot in the last 12 months? (Percentage number)
231 What percentage of Plantains have you lost for this plot in the last 12 months? (Perceutage uumber)
232 What perceutage of Tomatoes have you lost for this plot in the last 12 months? (Perceutage uumber)
233 What perceutage of Pepper have you lost for this plot in the last 12 months? (Percentage number)
234 What perceutage of Cassava have you lost for this plot in the last 12 months? (Percentage number)
235 What percentage of Onions have you lost for this plot in the last 12 months? (Percentage number)
236 What percentage of Sugar cane have you lost for this plot in the last 12 months? (Percentage number)
237 What percentage of Potatoes have you lost for this plot in the last 12 months? (Perceutage uumber)
238 What percentage of Coffee have you lost for this plot in the last 12 months? (Percentage number)
239 What percentage of Palm have you lost for this plot in the last 12 months? (Percentage uumber)
240 What perceutage of Cabbage have you lost for this plot in the last 12 months? (Percentage number)

Time Preference (i= now; 2= later)

241 *Would you like to have 1= $ 550 cfa now or 2= $750 cfa in 61 days?*
242 *Would you like to have 1= $ 310 cfa now or 2= $850 cfa in 7 days?*
243 *Would you like to have 1= $ 780 cfa now or 2= $800 cfa in 162 days?*
244 *Would you like to have 1= $ 670 cfa now or 2= $750 cfa in 119 days?*
245 *Would you like to have 1= $ 690 cfa now or 2= $850 cfa in 91 days?*
246 *Would you like to have 1= $ 800 cfa now or 2= $850 cfa in 157 days?*
247 *Would you like to have 1= $ 300 cfa now or 2= $800 cfa in 14 days?*
248 *Would you like to have 1= $ 410 cfa now or 2= $750 cfa in 20 days?*
249 *Would you like to have 1= $ 540 cfa now or 2= $800 cfa in 30 days?*
250 *Would like to learn to fly a plane? (1= yes 0= no)*
251 *Do you like to hunt lions monkeys or wild cats? (1= yes 0= no)*

252. *Do you like to do things that make you scared? (1= yes 0= no)*
253. *Do you like to walk alone at night? (1= yes 0= no)*

Assets

254. *How much do you have in bank savings? (amount in CFA)*
255. How much did yon have bank savings last year? (amount in CFA)
256. *How much land do you own? (nnmber in hectares)*
257. How much land did yon own land last year? (number in hectares)
258. What is the value of your house? (nnmber in CFA)
259. *How many spades do you own? (number)*
260. How many spades did you own last year? (number)
261. *How many hoes do you own? (number)*
262. How many hoes did yon own last year? (nnmber)
263. How many cars do yon own? (nnmber)
264. How many cars did you own last year? (nnmber)
265. *How many bicycles do you own? (number)*
266. How many bicyeles did yon own last year? (number)
267. *How many radios do you own? (number)*
268. How many radios did yon own last year? (number)
269. How many mopeds do you own? (nnmber)
270. How many mopeds did yon own last year? (nnmber)
271. *How many sewing machines do you own? (number)*
272. How many sewing machines did yon own last year? (number)
273. How many locally made looms do yon own?(nnmber)
274. *How many locally made looms did you own last year? (number)*
275. *How many gas-stoves do you own? (number)*
276. How many gas-stoves did you own last year? (nnmber)
277. *How many goats do you own? (number)*
278. How many goats did yon own last year? (number)
279. *How many pigs do you own? (nnmber)*
280. How many pigs did you own last year? (nnmber)
281. *How many sheep do you own? (nnmber)*
282. How many sheep did you own last year? (nnmber)
283. *How many chickens do you own? (number)*
284. How many chickens did you own last year? (nnmber)
285. *How many ducks do you own? (number)*
286. How many ducks did yon own last year? (nnmber)
287. *How many dogs do yon own? (number)*
288. How many dogs did you own last year? (number)
289. *How many kilos in crop stores of yams do you have now? (amount in kilos)*
290. How many kilos in crop stores of yams did you have last year at this time? (amonnt in kilos)
291. How many kilos in seed stores of yam for planting do you have now in storage? (amount in kilos)
292. How many kilos in seed stores of cocoyam for planting did yon hnve last year at this hme in storage? (amount in kilos)

293 *How many kilos in crop stores of cocoyam do you have now in storage? (amount in kilos)*
294 How many kilos in crop stores of cocoyam did you have last year at this time in storage? (amount in kilos)
295 How many kilos in crop stores of maize do you have now in storage? (amount in kilos)
296 How many kilos in crop stores of maize did you have last year at this time in storage? (amount in kilo)
297 How many kilos in seed stores of maize for planting do you have now in storage? (amount in kilos)
298 How many kilos in seed stores of maize for planting did you have last year at this time in storage? (amount in kilos)

Income

299 *How much in CFA did you make from wage labor this month?*
300 *How much in CFA in total did you make from the sale of your farm products this month?*
301 *How much did you make from the sale of your eggs this month?*
302. *How much have you made from the sale of your domestic livestock this month?*
303 *How much in CFA have you made from the sale of fruits this month?*
304 *How much in CFA have you made from the sale of your forest products (e.g. wood) this month? (Timber)*
305 *How much in CFA have you made from the sale of your hunted products this month? (Bushmeat)*
306 *How much in CFA have you made from the sale of foraged plant products this month? (NTFP s)*
307 *How much CFA in remittances have you made this month?*

Health

308 *Height in centimeters (number)* *(Measure without shoes/hat)*
309 *Weight in kilograms (number)* *(Measure without shoes/with clothes)*
310 *Upper arm skin-fold (Number off Caliper)*
311 *Describe present health (1= O.K. 2= Good, 3= Bad 9999= do not know)*
312 *Compared to health last year (1= Same 2= Better, 3= Worse 9999 =do not know).*
313 *Days confined to bed due to illness within past two weeks (Days)*
314 *Have you observed worms in your stool in the last two weeks? (no = 0, 1= yes 9999= do not know)*
315 *Number of days that blood was present in stool during last two weeks. (Days)*
316. *Number of days that blood present in cough in the last two weeks (Days)*
317 *Number of days that blood was present in vomit in the last two weeks (Days)*
318 *Number of days with fever accompanied by chills (Days)*
319 *Amount spent on packaged medication in the past two weeks (Amount in CFA)*
320 *How did you treat your last sickness within the last two weeks? (0= did not 1= yourself 2= local unlicensed doctor and remedy 3= local pharmacy, 4= local licensed doctor 5= local licensed nurse 6= other 9999 = do not know)*
321 *Amount spent on local remedies or cures in the past two weeks (Amount in CFA)*
322. *Amount spent for professional care out side the village (Amount in CFA)*

Credit

323 *How much in loans have you given out this month? (Amount in CFA)*

324 *How much in loans have you borrowed this month? (Amount in CFA)*

325 *What do you spend the loan on? (0= nothing 9 = built a new house 10= replanted, 11= loaned money 12= gave it away 13 put it in the bank 14 = joined a credit union, 15 = used it for food 16= bought gifts 17= invested it 18= paid fees, 19= lost it 21= hospital)*

326 *How much in interest have you paid this month? (Amount in CFA)*

327 *How much in interest have you received this month? (Amount in CFA)*

Legal

328 Do you have title to your land? (0= no, 1= yes 2= in process of getting 9999= do not know)

329 Do you own your house? (0= no, 1= yes, 2= in process of getting; 9999= do not know)

330 Do you share crop? (0= no 1= yes)

331 Are you indentured in servitude to any other persons? (0= no, 1= yes)

Shocks to Individual and absorbers

332 How many stillborn births have you had in the past year? (number)

333 How many deaths in your close family the past year? (number)

334 *Have you lost a wage paying job in the past month? (0= no 1= yes)*

335 *What did you do when you lost your job? (0= did nothing 1= borrowed cash from family to cover reparations/expenses 2 = arranged for credit to cover reparations/expenses 3 = sold assets to pay for reparations/expenses 4 = migrated, 5 = worked another job 7= increased use of forest products for sale or consumption, 8 = found money)*

336 *Are you part of an Ngengay group?*

337 *Did you receive Ngengay money this month?*

338 *Have you had severe debt in the past month? (0= no 1= yes)*

339 *What did you do to cope with the severe debt (0= did nothing 1= borrowed cash from family to cover reparations/expenses 3 = arranged for credit to cover reparations/expenses 4 = sold assets to pay for reparations/expenses 5 = migrated, 6 = worked another job 7= increased use of forest products for sale or consumption 8 = found money)*

340 *Have you had a foreclosure in the past month? (0= no 1= yes)*

341 *What did you do to cope with your foreclosure (0= did nothing 1= borrowed cash from family to cover reparations/expenses 3 = arranged for credit to cover reparations/expenses, 4 = sold assets to pay for reparations/expenses 5 = migrated 6 = worked another job 7= increased use of forest products for sale or consumption 8 = found money 9 = built a new house)*

342 *Have you had any disaster related shocks in the past month? (0= no 1= yes)*

343 *Have you experienced flood in the past month?(0= no 1= yes)*

344 *How did you recover from the flood, (0= did nothing 1= borrowed cash from family to cover reparations/expenses 3 = arranged for credit to cover reparations/expenses, 4 = sold assets to pay for reparations/expenses 5 = migrated 6 = worked another job 7= increased use of forest products for sale or consumption, 8 = found money 10= replanted)*

345 *Have you experienced drought in the past month?(0= no, 1= yes)*

346 *How did you cope with the drought? (0= did nothing 1= borrowed cash from family to cover reparations/expenses 3 = arranged for credit to cover reparations/expenses 4 = sold assets to pay for reparations/expenses 5 = migrated, 6 = worked another job, 7= increased use of forest products for sale or consumption 8 = found money)*

347 *Have you experienced fire in your crops this past month? (0= no 1= yes)*

348 *How did you cope with the fire in your crops. (0= did nothing 1= borrowed cash from family to cover reparations/expenses, 3 = arranged for credit to cover reparations/expenses 4 = sold assets to pay for reparations/expenses, 5 = migrated 6 = worked another job, 7= increased use of forest products for sale or consumption 8 = found money 10= replanted)*

349 *Have you experienced a fire in your home in the past month?*

350 *What did you do to cope with the fire in you home? (0= did nothing 1= borrowed cash from family to cover reparations/expenses 3 = arranged for credit to cover reparations/expenses 4 = sold assets to pay for reparations/expenses, 5 = migrated 6 = worked another job 7= increased use of forest products for sale or consumption, 8 = found money 9= built new home)*

351 *Have you experienced severe storm in the past month?(0= no 1= yes)*

352 *How did you recover from the severe storm? (0= did nothing 1= borrowed cash from family to cover reparations/expenses, 3 = arranged for credit to cover reparations/expenses 4 = sold assets to pay for reparations/expenses 5 = migrated, 6 = worked another job 7= increased use of forest products for sale or consumption 8 = found money, 9= built a new home 10= replanted)*

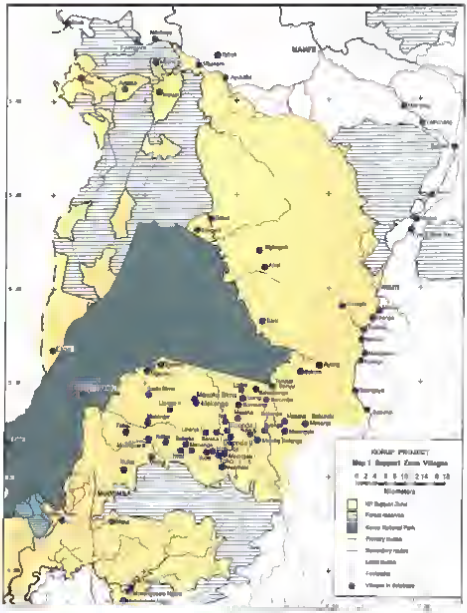
353 *How much theft of your property has occurred in the past month? (Record in CFA equivalent)*

354 *What did you do to cope with the theft (0= did nothing 1= borrowed cash from family to cover reparations/expenses 3 = arranged for credit to cover reparations/expenses, 4 = sold assets to pay for reparations/expenses 5 = migrated, 6 = worked another job, 7= increased use of forest products for sale or consumption 8 = found money 13= stole money back)*

355 *Have you had any health related shocks this month? (0= no 1= yes)*

356 *What did you do? (0= did nothing 1= borrowed cash from family to cover reparations/expenses 3 = arranged for credit to cover reparations/expenses, 4 = sold assets to pay for reparations/expenses 5 = migrated 6 = worked another job 7= increased use of forest products for sale or consumption, 8 = found money*

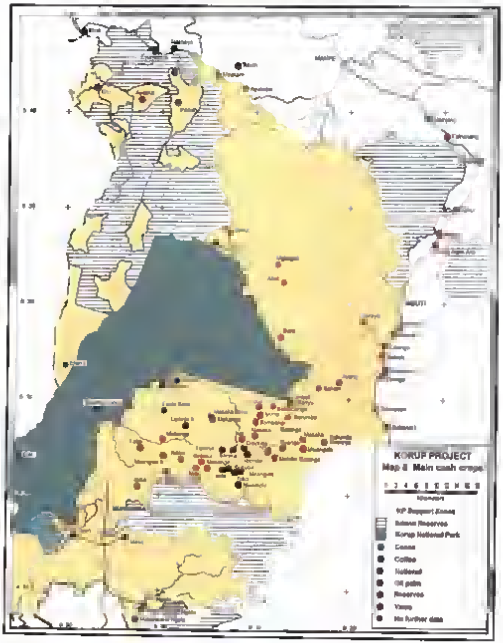
APPENDIX C
KORUP ZONE MAP



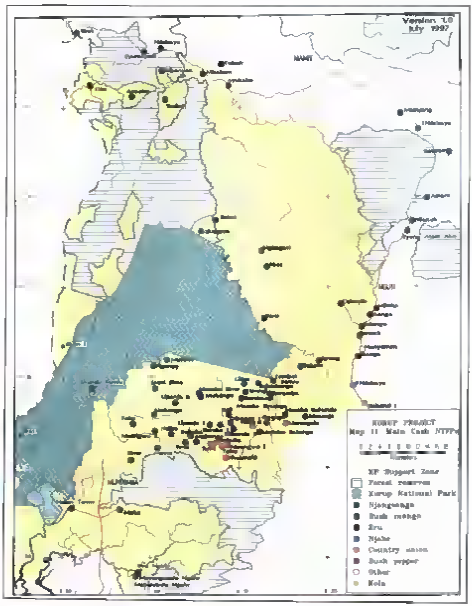
APPENDIX D
MAP OF CAMEROON

APPENDIX E
MAP OF KOKUP PARK

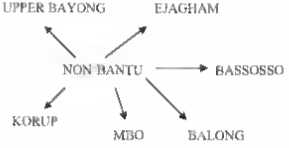
APPENDIX F
MAP OF KORUP CASH CROPS



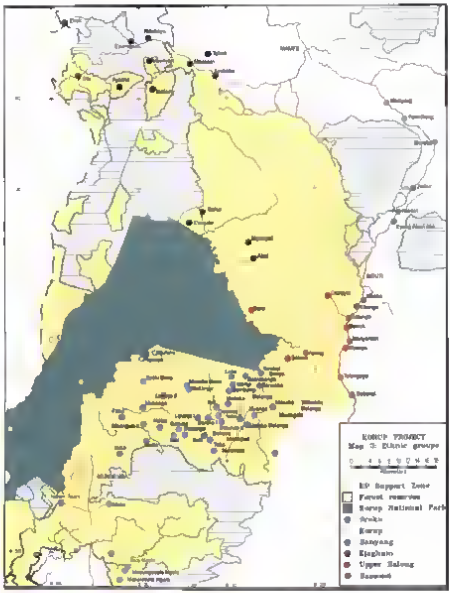
APPENDIX G
KORUP NTFPS



APPENDIX H
KORUP TRIBES



APPENDIX I
KORUP ETHNIC ZONES



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BIOGRAPHICAL SKETCH

Rodney J Stubina, the only child and first generation descendent of African refugees, grew up in Montréal, Canada Having being driven from Canada by the French he moved to New Jersey As the son of Nadine and Michael Russo, he soon became accustom to moving quite frequently around New Jersey Becoming the first in his family to attend college to compete a B A in Psychology, at Montclair State College NJ his interests strayed decidedly far from academics His efforts to try various careers including, retail telecommunications reporting landscaping, commercial photography, wilderness ranger, and a brief stint as Smokey Bear in Reno Nevada, he eventually ended in Florida where he became a US citizen and joined the Peace Corps Sent to Ayorou, Niger to live with the Tuareg and the Songhai for three years inspired him to devote his full efforts to working and researching disaster relief and resettlement After the Peace Corps Rodney Stubina worked for Africare as a Project Manager Returning to America he attended the University of Florida where he received a Master of Anthropology in 1996 He continued to devota he efforts to Africana research With the invaluable help of Ricardo Godoy, and Liz Losos of the Smithsonian and the patient guidance of his chair Art Hansen and members of his committee including Della McMillan Wilson, Tony Oliver Smith and Abe Goldman and the support of family and friends he earned his Doctor of Philosophy in Anthropology in 2002

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy

Arthur Hansen, Chair
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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality as a dissertation for the degree of Doctor of Philosophy

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